

Abt Associates Inc.
55 Wheeler Street, Cambridge, Massachusetts 02138
Telephone • Area 617-492-7100
TWX: 710-3201382

FOOD STAMP RECIPIENTS'
PATTERNS OF BENEFIT
REDEMPTION

Susan H. Bartlett
Margaret M. Hart

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 Contract Manager	 Quality Control Reviewer	 Management Reviewer
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Executive Summary

Little is known about how food stamp recipients spend their benefits. Paper food stamp coupons, the standard means by which the benefits are provided, carry no personal identification. Thus they provide no data on how quickly an individual household redeems its benefits, or in what stores.

The Electronic Benefit Transfer (EBT) demonstration that operated in Reading, Pennsylvania, created as a by-product a unique data base on recipients' use of benefits. It contains a record of every transaction through which households participating in the demonstration redeemed their benefits. The research presented in this report takes advantage of that data base.

The research addresses four major topics:

- Number, Value, and Timing of Food Stamp Purchases. This analysis examines how many purchases households make each month with their food stamp benefits, the size of the individual purchases, and the timing of purchases during the month.
- Patterns of Benefit Exhaustion. Here we look more closely at when during the month households completely exhaust their benefits, and the extent to which they carry forward benefits to the following month.
- Number and Type of Stores Used by Households. Recipients may spend their benefits in a variety of types of food stores, from supermarkets to convenience stores. This analysis examines how they divide their purchases among store types over the course of the month.
- Periods of Inactivity. Households do not necessarily redeem their benefits every month they receive them. Some households may delay using their benefits when they first begin to receive them. Others may not make any purchases for a month or two. Finally, some households may leave the Food Stamp Program without having redeemed all their benefits. The incidence of these different types of inactivity is the subject of the final analysis.

OVERVIEW OF THE DEMONSTRATION

The Food and Nutrition Service (FNS) of the U.S. Department of Agriculture is responsible for administering the Food Stamp Program. FNS funded the demonstration to test the feasibility of using an EBT system to

provide food stamp benefits to recipients. The demonstration operated in Reading, Pennsylvania between October 1984 and December 1985.¹

Under the food stamp coupon system as it operated in Reading before the demonstration, households receive an Authorization to Participate (ATP) card in the mail at the beginning of each month. They exchange the ATP for a specified amount of food stamp coupons. The coupons can be used, like cash, to purchase groceries. Once recipients receive their coupons, they can spend them when they liked, at any authorized food retail outlet, and the Food Stamp Program has no way of keeping track of spending. The Food Stamp Program compiles aggregate statistics on total spending in different stores, but has no information on individual recipients.

In the EBT demonstration, all transactions occurred electronically. The welfare department credits recipients' accounts with their monthly allotment. Recipients have a magnetic-stripe plastic card that they use to purchase groceries. They present the card to the cashier at the checkout counter and the amount of their purchase is automatically debited from their account. In order to correctly debit and credit accounts, then, the EBT system needs to keep track of individual client transactions.

The demonstration involved a computer system that recorded every event that affected recipients' accounts. Events include grocery purchases, monthly allotments issued by the welfare department, credits to correct for accidental overcharging by the store, and other actions by the welfare department to adjust recipients' account balances. Each record includes the

¹For more complete information on the nature of the demonstration system and its results, see:

John Kirlin, Developing an Electronic Benefit Transfer System for the Food Stamp Program, Cambridge, Massachusetts: Abt Associates Inc., August 1985;

John Kirlin and William Hamilton, Performance Issues in an Electronic Benefit Transfer System for the Food Stamp Program, Cambridge, Massachusetts: Abt Associates Inc., February 1987; and

William Hamilton, et. al., The Impact of an Electronic Benefit Transfer System in the Food Stamp Program, Cambridge, Massachusetts: Abt Associates Inc., January 1987.

recipients' identification number, the amount involved, the grocer's identification number (for purchases and credits), and the date and time of the transaction. By sorting these data by household, we can obtain information on how recipients used their food stamp benefits over the entire time they participated in the EBT demonstration.

Results of this analysis should be useful in designing future EBT systems by providing information on necessary system capacities. The analysis will also provide at least a partial picture of how food stamp recipients use their benefits, information that will be useful in managing and setting policy for the Food Stamp Program. It must be noted, however, that the data describe the use of benefits in an EBT system, and somewhat different patterns might exist for the use of paper coupons. Although no data are available to test this issue directly, rough estimates suggest that any such differences are likely to be small and that most patterns of coupon use should resemble the electronic benefit usage patterns examined here.

MAJOR FINDINGS

Number, Value, and Timing of Food Stamp Purchases

- Households make an average of 8.3 food purchases per month with their EBT benefits. Most households make 6 or fewer purchases, but 8 percent make over 20 purchases.
- Recipients use their benefits early in the month; they make 80 percent of their purchases in the first two weeks after receiving benefits.
- The average value of a food stamp purchase is \$14.32. However, 50 percent of all purchases are less than \$5.
- Most households use their benefits both for large shopping trips and to purchase just a few items.
- Households with larger allotments make more purchases, for somewhat larger average amounts, than those with smaller allotments.
- Smaller households, male-headed households, and households headed by a person over 50 years old tend to make more purchases than other households, other things being equal.

Patterns of Benefit Exhaustion

- Households redeem their benefits quite quickly. In the first four days of the month, they spend an average of 50 percent of their allotment. By the end of the second week, the average household spends 90 percent.
- Most households redeem their entire allotment by the end of the month. Only 13 percent have more than \$1 or 1 percent of their allotment remaining at the end of the average month.
- The amount recipients carry forward is quite small, averaging under \$4.
- Carrying a significant amount of benefits forward into the next month seems to represent a special situation; it never occurs for most households, and occurs routinely for only a very small percent.

Number and Type of Stores Used

- Households use an average of three different stores in a month. Those with larger allotments tend to use more stores.
- Most households shop in at least one supermarket each month, frequently in conjunction with another type of store.
- Almost three quarters of all food stamp benefits are spent in supermarkets, where the mean value of an EBT purchase is \$25. Households make nearly the same number of purchases per month (about 3) in grocery stores, but spend less than \$7 per purchase. In convenience stores and other kinds of stores, the mean number of EBT transactions per month drops to 1.3 and 0.6, respectively, with the average purchase under \$5 in both.
- Less than 8 percent of all EBT funds are redeemed in convenience and "other" store types combined, but over 19 percent of purchases occur there.
- The greater the monthly benefit allotment, the more types of stores visited throughout the month. Regardless of allotment amount, however, the highest proportion of total monthly spending occurs in supermarkets (at least 40 percent), followed by grocery stores.

Periods of Inactivity

- In an average month, 4 percent of the households that are issued benefits do not make any purchase transactions. About half of these are new households that have not yet begun redeeming benefits. The other half redeem benefits in previous and subsequent months, but experience at least a one-month interlude in which they accumulate benefits rather than using them immediately.

- Benefits are placed in new recipients' accounts as soon as they are certified eligible, but the recipients must have their EBT cards encoded and be trained in using them before they can purchase food with their benefits. About 1 percent of the newly ~~certified recipients never have their cards encoded, and another~~ 5 percent have their cards encoded but never use them to make a purchase. These appear to be households in which their circumstances change immediately after applying for benefits: some apparently move out of town, and others may get jobs or have other improvements in their situation that reduce their need for assistance.
- About 20 percent of new recipients make their first EBT purchase in a later month than their first issuance; 14 percent do not immediately have their card encoded and the other 6 percent did not begin using their encoded card right away. Most of these are recipients who apply for benefits late in the month, so the delay into the next issuance month is probably only a matter of days. A few recipients wait a month or more to use their benefits, however.
- After they begin using their EBT benefits, 8 percent of the households have periods in which they are issued benefits but do not use any. These households tend to include only one or two persons and to have quite small food stamp allotments. Typically, they experience a single month in which they redeem no benefits, and then use the accumulated balance in the next month.
- When households temporarily or permanently stop participating in the Food Stamp Program (i.e., are not issued further allotments), about 40 percent still have more than \$1 or 1 percent of their of benefits in their EBT accounts. Most of those who do not participate never use any of the remaining benefits. Among the households who resume participation, most use at least part of their balance during the time they get no allotments. For both groups, most of the benefits redeemed during non-participation periods are redeemed in the first month, and practically all within five months.

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Chapter One

INTRODUCTION

Chapter One

INTRODUCTION

The Electronic Benefit Transfer (EBT) demonstration in Reading, Pennsylvania made many changes in the way food stamp recipients receive and redeem their benefits. Prior to the demonstration, the welfare department mailed Authorization-to-Participate (ATP) cards to recipients each month, which they exchanged for food stamp coupons. They then used the coupons to purchase food. In the EBT system, benefits are delivered electronically. Each month, recipients' benefits are automatically credited to their accounts. To purchase food using the benefits, recipients simply present their plastic EBT card to the cashier at the checkout counter, and the cost of the groceries is deducted from their account balance.

Food stamp coupons have no personalized identification and no expiration date. Once a recipient receives the coupons, he or she may use them in few or many purchases, in one store or many, quickly or slowly, or not at all. Food Stamp Program records describe the total volume of food stamps redeemed at particular stores, but provide no redemption information at the level of the individual client.

In contrast, keeping track of individual households' redemption actions is a critical part of the EBT system. When the recipient uses food stamp benefits to make a purchase, the recipient's identity and the amount of the purchase must be recorded so that the proper account can be debited. The identity of the store must be transmitted so that the funds can be transferred to the appropriate store's account. Because of these requirements, the EBT system used in Reading includes a computerized file that records every event affecting a household's account.¹ Events include grocery purchases, monthly allotments credited to the account, adjustments (for example, to correct for overcharging on a purchase), and other actions that alter the household's account balance.

¹On-line EBT systems require a centralized computer file to keep track of transactions. Off-line EBT systems, in which recipients' balances are encoded directly on their card might not require a similar centralized file.

This computer file provides a unique data base to analyze the shopping behavior of the food stamp recipients. Computerized records cover all recipients who used the EBT system, though only purchases in which the recipient used food stamp benefits are included (food stamp benefits are estimated to cover about 60 percent of each food stamp household's total food purchases in Reading¹). No record exists for the cash purchases. The findings thus apply only to how EBT users redeem their food stamp benefits. As a result of other data collection efforts during the demonstration, a limited amount of information exists on how coupon users redeem their benefits and this is included where appropriate.

The data provide information on the volume and timing of food stamp transactions, which can be used to determine the necessary capacities of future EBT systems. The data also allow us to document food stamp recipients' benefit redemption patterns.

1.1 RESEARCH TOPICS

This research addresses four topics. Chapter 2 examines the number of food stamp purchases EBT recipients make each month and when during the month they make the purchases. The analysis also examines the value of individual purchases and how food stamp recipients combine various sized purchases during the month. This information gives an overall picture of food stamp recipients' redemption patterns.

We would expect that, in general, food stamp recipients would spend all of their benefits each month, given that they presumably need the benefits to meet their food needs. Chapter 3 thus examines recipients' benefit exhaustion patterns. It analyzes how quickly households spend their benefits and how many households do not spend their allotment by the end of the month. The research also examines whether there are identifiable groups of recipients who carry over benefits from one month to the next.

¹This calculation assumes that a family's total food purchases equal the Thrifty Food Plan value established by the Federal government to compute food stamp allotments. The calculation is estimated from a sample of 219 households in Reading, and is thus a rough approximation.

Many types of stores in Reading participated in the EBT demonstration, including large supermarkets, grocery stores, convenience stores, and specialty stores. Chapter 4 addresses the question of how food stamp recipients divide their purchases among the different types of stores, and whether there are some types or combination of types of stores that they use more frequently than others.

The data also allow us to examine periods in which recipients do not spend their benefits. Chapter 5 examines several types of inactivity. The first two concern how long it takes new recipients to begin using the EBT system. Next, we investigate the periods during which some on-going recipients do not spend any of their benefits. Finally, we examine what happens when recipients leave the Food Stamp Program, including the frequency and timing of final benefit exhaustion.

1.2 DATA SOURCES

The primary source of data used in this report is the EBT system's computer file that contains records of every EBT card transaction. Each time a household receives an allotment, purchases groceries, has its account credited because the store makes an error at the checkout, exchanges benefits for food stamp coupons, or the welfare department makes account adjustments, a record is created. Besides recording the recipients' identification number, the records include the date, time, and value of the transaction. For food purchases they also include the store's identification number. The major types of transactions and the frequency with which they occurred during the demonstration are presented in Exhibit 1-1. Over the course of the demonstration, 5541 households used the EBT system, with an average of just over 3,000 participating in a given month.

In order to use these data to analyze the shopping patterns of recipients, the records were sorted by household case number to get the entire history for each household during the months it participated in the demonstration. We then created a summary of each household's monthly shopping activity, with one record for each month that the household participated in the program, which resulted in 49,895 records. Each case month record

Exhibit 1-1

EBT Transactions
Demonstration Period: October 1984 - December 1985

<u>Type of Transaction</u>	<u>Frequency</u>	<u>Percent</u>
Issuance	50,611	10.0%
Purchase:		
with EBT Card	384,119	75.9
manual ^a	1,479	0.3
Credit	2,478	0.5
Other Transactions (balance inquiry, record update, etc.)	<u>67,200</u>	<u>13.3</u>
Total Number of Transactions	505,887	100.0%
Number of Households Using EBT system	5,541	

^aIf an electronic transaction cannot be processed because either the EBT Center's computers are down, the retailer's BTT is not working, or the retailer does not have access to a BTT (e.g., home delivery dairies), a recipient may still purchase up to \$35 worth of groceries each day using manual backup procedures.

included data on the monthly benefits issued to the household and the number and value of purchases by day.¹

The number of case months per recipient varies from 1 to all 15 allotment months, with a mean of 9 months (Exhibit 1-2). Thus, means computed at the case-month level necessarily weight each household by the number of months it was in the demonstration. For example, the mean number of purchases per case month for 1 family making 1 purchase per month for 10 months and another making 10 in 1 month will be $20 \text{ purchases} \div 11 \text{ months} = 1.8 \text{ purchases per month}$. Hence, computed the mean number of purchases per household as

Exhibit 1-2

Number of Months in the Food Stamp Program:
Demonstration Period

<u>Number of Months</u>	<u>Households</u>	<u>Percent</u>
15	1,068	19.3%
14	496	9.0
13	101	1.8
12	706	12.7
11	240	4.3
10	200	3.6
9	243	4.4
8	198	3.6
7	275	5.0
6	284	5.1
5	284	5.1
4	306	5.5
3	379	6.8
2	432	7.8
1	<u>329</u>	<u>5.9</u>
mean = 9.0	Total = 5,541	100.0%
(s.d.) (4.9)		

sample of all transactions and used the resulting 24,206 purchase transactions for all transaction analyses. This sample size was more economical to use and provided a sufficient number of observations to ensure statistically reliable results.

In order to orient redemption patterns relative to the day households receive benefits, we define "allotment months" as beginning on the day of issuance, and lasting until the next regularly occurring issuance.¹ All discussion of "months" in this report refers to this analytic definition, not to calendar months.

The objective of the analysis is to describe the benefit redemption patterns of food stamp recipients during months in which the EBT system was functioning fully and during months in which households were actively using the system. Therefore, we have excluded certain months from the analysis. The EBT system began operating in October 1984. During the first four months, recipients received training and began using the system. Retailers also had to adjust to the new system. In addition, although the EBT system generally performed its main functions successfully during this period, there were some significant problems and delays. Thus, the months from October 1984 through January 1985 are considered the start-up or training period and are excluded from most of the analyses. Because the demonstration ended in the middle of the December allotment month, transactions occurring after the recipients' December issuances also were deleted from the analysis.

In order to eliminate months in which households were likely to exhibit atypical redemption behavior, we also excluded the first and last months households used the program, months in which they received no benefits, and months they made no purchases.² (We examine these atypical months in the analysis of inactivity, Chapter 5.) After making these exclusions, 31,216 case months remained, and these form the basis for much of the analysis.

¹More information on allotment month definition is available in Appendix A. Beginning in June 1985, the BCAO began issuing the regular monthly allotment of benefits in 2 stages, about 1 week apart. The analysis adjusts for this by beginning the "month" on whatever day the recipients received a regular issuance.

²These restrictions have little effect on aggregate measures of system activity, such as the number of purchases made per month, as shown in Chapter 2.

Supplemental Data Sources. Three other data sources provide additional information on the characteristics of food stamp recipients and of the different stores that participated in the demonstration.

The Pennsylvania Department of Public Welfare (PDPW) maintains data on the racial/ethnic background, household size, and public assistance status of food stamp recipients in the files it uses to issue benefits. These data are available for all recipients.

The evaluation of the EBT demonstration included two rounds of interviews with EBT recipients, asking them a variety of questions about their households and their experiences with the system. We extracted the demographic data and information relevant to shopping patterns on 402 survey respondents. Some analyses are done on this subsample of EBT recipients.

The EBT system's computerized file of transactions contained the identification number of the food stores in which each purchase was made, but no other information about the store. Data from FNS records were used to determine whether the store was a supermarket, grocery store, convenience store or some other type of store.

1.3 ORGANIZATION OF THE REPORT

The report follows the topics discussed above. As an overview of the shopping patterns of food stamp recipients, Chapter 2 examines the number, value and timing of food stamp purchases. Chapter 3 focuses on whether recipients use all their benefits each month and when during the month they exhaust them. The types of stores in which recipients choose to use their benefits, how much they spend in different stores, and variations in these patterns throughout the month is the topic of Chapter 4. The final chapter then turns to examine the various situations in which recipients do not use their allotted benefits.

Chapter Two

NUMBER AND VALUE OF EBT PURCHASES

Chapter Two

NUMBER AND VALUE OF EBT PURCHASES

Interest in using electronic systems to deliver welfare and food stamp benefits has grown in recent years. Small scale projects have been implemented in several areas. Although the EBT demonstration system in Reading was the first of its kind in the Food Stamp Program, additional tests of electronic issuance systems are likely in the near future.

Planners of such systems need data on likely utilization patterns. For example, how many food stamp purchases will households make in a month? What size are these purchases--large, small, or a combination of both? Equally important is the distribution of purchases over time. Do recipients concentrate their purchases in the days just after they get their benefits, or do they spread them out during the entire month? Answers to these questions will help planners determine the capacities needed for EBT systems, and may suggest additional ways the Food Stamp Program can meet the needs of recipients and participating grocers.

The first two sections of this chapter examine overall shopping patterns, focusing on the number, value, and timing of food stamp purchases. It seems likely that patterns will vary depending on the amount of benefits the household receives, and Section 2.3 examines these differences. The final issue discussed in this chapter is whether purchase patterns vary by demographic characteristics. Such variations would be important for predicting how EBT purchase patterns would differ, depending on the area's caseload composition. Moreover, they provide a perspective on whether particular groups, such as households receiving public assistance, the elderly, handicapped, non-English speakers, or those with little education, might be having difficulties with the EBT system.

2.1 NUMBER OF EBT PURCHASES PER MONTH

Conventional wisdom suggests that food stamp recipients make their food stamp purchases relatively soon after receiving their allotment, and the data support this belief. Households using the EBT system made over a quarter

of a million purchases from February 1985 through November 1985. They made half of their purchases during the first week following the monthly allotment. By the end of the second week, they had made 80 percent of their monthly food stamp purchases, as shown in Exhibit 2-1.

Most recipients begin purchasing soon after receiving their monthly allotment, as Exhibit 2-2 shows. Forty-five percent of all households make a purchase the day benefits are issued, and by the end of the first week, 90 percent of households have begun purchasing.

Anecdotes and recipient survey responses suggest that many or most households spend their entire allotment in one or two purchases right after issuance. This was not the dominant pattern in the demonstration. Although recipients make most of their purchases relatively early in the month, in an average month, households make approximately 8 EBT purchases: 4 in the first week of the month, 2 the second week, and 1 in each of the last two weeks (Exhibit 2-3).¹ Considerable variation exists around the average, however, as the standard deviation of the estimate is approximately the same size as the mean.

Some households make many more purchases per month than the average, as Exhibit 2-4 shows. Eight percent of households make over 20 purchases per month and one household made 89 purchases in a single month. At the other extreme, 14 percent of the households make only 1 purchase, and about a third make less than 3.²

Similar variation can be seen when examining the distribution of purchases in each week of the month. The majority of households make around the average number of purchases, though some households make a very large number of purchases. For example, the average household makes 2.3 purchases during the second week of the month, and approximately 80 percent of all

¹We also calculated an average number of purchases per month defined as the total number of transactions that occurred divided by the number of active cases (households receiving an issuance). This calculation is of interest to system planners because it does not restrict the case months to be included, as does most of the analysis in the chapter. Using this definition, the average number of purchases per month is 8.05, only slightly lower than the figure calculated using the more restrictive definition.

²Some households made no purchases at all, as discussed in Chapter 5.

Exhibit 2-1

Number of Food Stamp Purchases, by Days and Weeks After Benefit Issuance^a

Day or Week of Allotment Month	Number of Purchases	Percent of Total
Issuance Day	26,039	10.1%
Day 2	22,775	8.8
3	18,478	7.2
4	17,936	6.9
5	16,314	6.3
6	15,229	5.9
7	12,974	5.0
Week 1	129,745	50.2%
2	72,159	27.9
3	35,113	13.6
4	<u>21,221</u>	<u>8.2</u>
Total	258,238	100.0%
Monthly Average	8.3	

Source: Case-month records, N=31,216.

^aCovers period from February 1985 through November 1985.

Exhibit 2-2

**Percent of Sample Making a Purchase, by
Days and Weeks After Issuance**

Day or Week of Allotment Month	Percent Making a Purchase	Percent Making First Purchase
Issuance Day	45.0%	45.0%
Day 2	43.8	19.1
3	38.3	9.8
4	38.5	7.8
5	34.9	4.4
6	33.2	3.0
7	28.6	1.6
Week 1	90.6	90.6%
2	65.7	6.4
3	41.6	2.0
4	27.1	1.0
		<u>100.0%</u>

Source: Case-month records, N=31,216.

Exhibit 2-3

Average Number of Food Stamp Purchases,
by Days and Weeks After Issuance

Day or Week of Allotment Month	Average Number of Purchases
Issuance Day	0.8 (1.2)
Day 2	0.7 (1.1)
3	0.6 (0.9)
4	0.6 (0.9)
5	0.5 (0.9)
6	0.5 (0.8)
7	0.4 (0.8)
Week 1	4.2 (4.1)
2	2.3 (3.1)
3	1.1 (2.1)
4	0.7 (1.7)
Total for month	8.3 (7.9)

Note: Standard deviations are in parentheses.
Source: Case-month records, N=31,216.

Exhibit 2-4

**Distribution of Number of Food Stamp Purchases,
by Weeks After Issuance**

Week	Mean	Percent Distribution of Case Months by Number of Purchases							
		0	1	2-3	4-6	7-9	10-19	20+	Total
1	4.2	9.4%	19.9%	27.2%	23.2%	10.6%	8.8%	0.9%	100.0%
2	2.3	34.3%	20.3%	22.4%	14.1%	5.3%	3.5%	0.2%	100.0%
3	1.1	58.4%	17.2%	14.3%	7.0%	2.0%	1.0%	<0.1%	100.0%
4	0.7	72.9%	13.4%	8.2%	3.6%	1.2%	0.7%	<0.1%	100.0%
Total	8.3	----	14.0%	18.9%	20.4%	14.9%	23.3%	8.4%	100.0%

Source: Case-month records, N=31,216.

households make 3 or fewer purchases. At the same time, 4 percent of the households make over 10 purchases during the second week.

Actual Versus Recipients' Reports of Number of Purchases. The actual number of EBT purchases per month is much higher than that reported by households. Data collection during the EBT demonstration included two rounds of interviews with food stamp recipients, and covered numerous questions about their experiences with the EBT system.¹ One question asked households how often they did grocery shopping using the EBT card. Approximately 40 percent reported shopping only once a month, and another 30 percent reported shopping once every other week. Exhibit 2-5 compares the number of purchases recipients report making and the number they actually make, showing clearly that most recipients underestimate the number of food stamp purchases they make in a month. For example, of the recipients who report shopping once a month, 60 percent actually make 4 or more purchases per month. The underestimation occurs in all response categories.

One explanation for this underreporting is that recipients do not count multiple purchases they make in one day. In addition, they may forget about the small purchases they make, such as going to buy bread and milk. However, neither one of these explanations accounts for all the underestimation. Even looking just at the number of days per month in which households make a purchase or the number of days they spend over \$5,² recipients' reports of their behavior underestimate their actual behavior. It is not possible to estimate precisely the size of the discrepancy since the survey did not ask respondents to report the actual number of trips they made. However, making assumptions about the ranges of the response categories, we can estimate the mean number of purchases reported. Using this technique, survey respondents report making between 3 and 5 purchases in an average month, or 30-55 percent of the number they actually make.³ The implication of this analysis is that retrospective survey data should not be

¹See William Hamilton, et. al., The Impact of an Electronic Benefit Transfer System in the Food Stamp Program. Cambridge, MA: Abt Associates, January 1987.

²About half of all EBT purchases were for \$5 or less.

³See Appendix B, Exhibit B-2.1.

Exhibit 2-5

Number of EBT Purchases Per Month:
Actual Versus Number Reported by Recipients

Actual Number of EBT Purchases Per Month ^a	Recipient reports of how often grocery shopping done with EBT card					
	Once a Month (N=168)	Every Other Week (N=113)	Once a Week (N=70)	More than Once a Week Less Than Daily (N=31)	Daily (N=8)	More than Once a Day (N=2)
1	14.9%	2.7%	11.4%	---	---	---
2-3	20.8	16.8	5.7	9.7%	---	---
4-8	34.5	43.4	38.6	22.6	---	---
9-14	16.7	26.5	32.9	22.6	50.0%	50.0%
15-20	9.5	8.8	7.2	22.6	12.5	50.0
21 or more	3.6	1.8	4.3	22.6	37.5	---
Total Mean	100.0% 7.3	100.0% 8.0	100.0% 8.4	100.0% 14.8	100.0% 19.6	100.0% 14.2

Source: EBT transaction data; recipient surveys.

^aAverage number for the household over the entire time of its participation in the program.

used in planning for EBT system capacity, unless better questions can be formulated and validated; otherwise, as responses may seriously underestimate the activity that will actually occur.

Timing of Purchases During the Day and Week. In planning for an EBT system, it is also important to know during what times of the day food stamp purchases are likely to occur. Peak demand on the system is determined by the maximum number of purchases being made at the same time. Moreover, if food stamp purchases cluster during certain times of the day, grocers may need to take this into account when planning schedules for cashiers.

Households tend to spread out their purchases fairly evenly between 10:00 a.m. and 8:00 p.m., with 80 percent of all purchases occurring during these hours (Exhibit 2-6). The number of purchases peaks during the late afternoon, with 20 percent of all purchases made between 4 p.m. and 6 p.m. This corresponds to grocers' reports that the late afternoon tends to be their busiest shopping period for non-food stamp as well as food stamp business.

Grocers report that Thursday through Saturday are peak shopping days. EBT purchases tend to be heavily concentrated in the days immediately after issuance. Therefore, one way to minimize the impact of food stamp shopping on grocers would be to issue benefits between Monday and Wednesday.

Purchase Patterns with EBT, Cash or Coupons. It would be useful to know whether the patterns observed in the EBT demonstration are similar to the behavior of food stamp recipients using coupons and the population at large, or whether the EBT system itself causes some divergence. No available data support a direct examination of this issue, but some rough perspectives are possible.

EBT recipients probably make about the same number of purchases per month as recipients using food stamp coupons. In their survey responses, EBT recipients tend to estimate slightly higher numbers of shopping trips than coupon recipients. On the other hand, checkout observations indicate that the average value of EBT purchases is very similar to that of coupon purchases, or perhaps slightly higher.¹ Because allotment amounts are similar for recip-

¹The checkout observations involved recording purchases made during selected hours in a sample of stores. Because these data do not measure a household's total spending, they provide only a limited comparison between EBT

Exhibit 2-6

Number of Purchases by Time of Day

Time Period	Percent of Purchases
Morning:	
8 to 10 a.m.	6.9%
10 a.m. to noon	14.5
Afternoon:	
12 to 2 p.m.	16.7
2 to 4 p.m.	17.9
4 to 6 p.m.	20.3
Night:	
6 to 8 p.m.	11.6
8 to 10 p.m.	7.5
10 p.m. to 8 a.m.	4.5
	<u>100.0%</u>

Source: Transaction records (10% random sample), N=24,206 purchases.

ipients using the EBT and coupon systems, larger average purchases mean fewer purchases per month, other things being equal. These indicators suggest very small EBT-coupon differences, and the apparent differences are in opposite directions, suggesting that no important differences exist.

Grocers surveyed in the EBT demonstration said they saw no differences between EBT and coupon recipients' purchasing patterns in terms of the time distribution of purchases. They felt the two groups had equivalent purchase concentrations by day of month, day of week, and hour of day.

Comparing EBT purchase patterns to those of non-food stamp households is more difficult. However, the data suggest that non-food stamp households probably make similar or slightly more purchases. EBT households average 8 food stamp purchases per month, but food stamp benefits are not expected to represent most households' total food expenditures. Adjusting for purchases made without using food stamp benefits, we estimate an average of 13 food purchases per month for EBT households.¹ National figures indicate that American households make 2.4 shopping trips per week to supermarkets, or about 10 trips per month.² This is somewhat below the 13 purchases by food stamp households, but those include many purchases at stores other than supermarkets. Demonstration households average 3.3 EBT purchases and an estimated 5.4 total purchases in supermarkets. Thus EBT recipients make substantially fewer purchases in supermarkets than the general population, and it seems likely that the total number of food purchases (at all types of stores) is also lower for recipients.

2.2 VALUE OF EBT PURCHASES

EBT demonstration participants redeemed over \$3.5 million in food stamp purchases between February and the end of November, 1985. Households

¹This adjustment assumes that a household's total spending will equal the Thrifty Food Plan amount that FNS uses to establish food stamp benefit amounts. For each household, we adjust the number of monthly purchases by using the ratio of that household's allotment to the Thrifty Food Plan amount for households of the appropriate size.

²Trends Update 1987: Consumer Attitudes and the Supermarket. Washington, D.C.: Food Marketing Institute, 1987.

spent twenty percent of the total on the day benefits were issued, and 70 percent within the first week, as Exhibit 2-7 shows. By the end of the second week, almost 90 percent of the total was spent.

The average household spends \$112 of food stamp benefits a month, approximately \$80 of this in the first week, as Exhibit 2-8 shows. The average spent per week decreases steadily over the month, and the average during the last week is less than \$5. These figures apply only to food stamp purchases. Since benefits are not intended to cover total food expenditures for most households, they presumably make additional food purchases with cash, particularly in the latter part of the month.

Examining the value of individual purchases reveals considerable variation in the amount recipients spend on a single purchase. The average value of a purchase is just over \$14, as Exhibit 2-9 shows. However, almost 50 percent of all purchases are for less than \$5, and 27 percent are for less than \$2.50. In contrast, 8 percent of all purchases exceed \$50. Recipients do not use their benefits just to make large shopping trips, but often use the EBT card in a quick trip to buy a couple of items.

Households tend to make their large shopping trips near the beginning of the month. Even so, over 40 percent of the purchases in the first week are for less than \$5. During the day benefits are issued, when the average purchase is largest, one-third of the purchases total less than \$5. Recipients make fewer large purchases as the month progresses. In the last week of the month, nearly two-thirds of the purchases are smaller than \$5.

These aggregate figures do not allow us to examine the behavior of individual households. The observed pattern might occur because some households make only large purchases and others make only small purchases, or because individual households make some large and some small purchases. Examining the purchases by individual households reveals that almost half the households mix small, medium and large purchases. Small purchases are defined here as those less than \$5, medium-sized as \$5-25, and large as \$25 and over (Exhibit 2-10). Another 25 percent of households make small- and medium-sized purchases or medium-sized and large purchases. Less than 10 percent spend their money making only large purchases. Thus households generally use their EBT card to make a range of purchases, some quite small and others for much larger amounts.

Exhibit 2-7

**Value of Food Stamp Purchases, by Days
and Weeks After Benefit Issuance**

Day or Week of Allotment Month	Value of Purchases	Percent of Total
Issuance Day	\$734,352	20.9%
Day 2	557,561	15.9
3	363,714	10.4
4	305,737	8.7
5	216,299	6.2
6	187,003	5.3
7	120,651	3.4
Week 1	2,485,319	70.7
2	610,725	17.4
3	271,772	7.7
4	<u>146,174</u>	<u>4.2</u>
Total	\$3,513,990	100.0%

Source: Case-months records, N=31,216.

Exhibit 2-8

**Average Amount of Food Stamp Benefits Spent
in Days and Weeks After Issuance**

Day or Week of Allotment Month	Average Benefits Spent
Issuance Day	\$23.52 (44.02)
Day 2	17.86 (36.86)
3	11.65 (28.63)
4	9.79 (25.12)
5	6.93 (19.40)
6	5.99 (17.19)
7	3.87 (12.15)
Week 1	\$79.62 (63.07)
2	19.57 (27.56)
3	8.71 (17.75)
4	4.68 (14.37)
Total for month	\$112.58 (72.53)

Note: Standard deviations are in parentheses.
Source: Case-months records, N=31,216.

Exhibit 2-9

Size of Food Stamp Purchases During
Different Days and Weeks of the Allotment Month

Days and Weeks of Allotment Month	Value of Purchase								Total
	Average Value of Purchase	Less Than \$2.50	\$2.50-4.99	\$5.00-9.99	\$10.00-24.99	\$25.00-49.99	\$50.00-99.99	\$100 or more	
Issuance Day (N=2,557)	\$28.85	16.7%	16.0%	17.2%	17.8%	11.0%	13.7%	7.7%	100.0%
2 (N=2,171)	25.77	16.9	16.8	19.4	17.5	10.7	12.6	6.0	100.0
3 (N=1,810)	21.47	20.7	21.5	18.1	16.8	8.3	9.4	5.2	100.0
4 (N=1,713)	17.23	23.6	20.3	17.6	19.6	8.1	8.3	2.5	100.0
5 (N=1,565)	12.77	26.4	24.0	19.6	16.9	6.6	5.4	1.2	100.0
6 (N=1,437)	12.98	23.5	26.2	20.7	16.6	6.8	4.9	1.5	100.0
7 (N=1,161)	10.24	29.9	25.6	18.9	15.4	6.1	3.6	0.5	100.0
Week 1 (N=12,414)	20.03	21.5	20.6	18.6	17.4	8.7	9.1	4.0	100.0
2 (N=6,637)	8.99	29.9	24.7	21.3	16.3	5.3	2.2	0.4	100.0
3 (N=3,252)	7.54	32.8	25.3	20.8	15.2	5.0	1.0	0.1	100.0
4 (N=1,843)	7.08	39.8	23.5	17.7	13.6	3.7	1.4	0.2	100.0
Total for Month (N=24,146)	\$14.32	26.7%	22.6%	19.6%	16.5%	6.8%	5.5%	2.2%	100.0%

Source: Transaction records (10% random sample), N=24,146 purchases.

Exhibit 2-10

Shopping Patterns of Food Stamp Households

Size of Purchases Made by Households	During Entire Month (N=3110)	During First Week (N=2865)	During Second Week (N=1988)	During Third Week (N=1257)	During Fourth Week (N=796)
All small purchases (less than \$5.00)	1.6%	3.3%	21.8%	34.5%	44.6%
All medium-sized pur- chases (\$5.00-24.99)	11.2	13.3	22.1	25.1	22.1
All large purchases (greater than \$25.00)	8.9	16.6	7.2	5.3	6.3
Small and medium- sized purchases	14.7	12.8	32.1	25.9	21.9
Small and large pur- chases	6.7	9.4	4.2	2.7	1.6
Medium-sized and large purchases	12.3	15.0	6.0	3.3	1.8
Small, medium, and large purchases	<u>44.5</u>	<u>29.5</u>	<u>6.6</u>	<u>3.1</u>	<u>1.8</u>
	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Case-level records, N=3,110 households (created from the 10% transaction sample). A household may shop during any or all weeks. Therefore, the categories are not mutually exclusive.

2.3 VARIATIONS IN PATTERNS BY ALLOTMENT AMOUNT

We would expect to find some differences in the shopping patterns of households that receive relatively small food stamp allotments compared to households that receive a high level of benefits, since the latter have more to spend. However, it is unclear whether these households will make more purchases during the month, or spend more on each purchase, compared to other households.

Households with large allotments make far more purchases per month than do households that receive a low level of benefits, as Exhibit 2-11 shows. Households that receive \$50 or less make only 2.7 purchases per month, compared to an average of 13.5 purchases for households that receive over \$160 in monthly benefits. This pattern holds during every week of the month.¹

In addition to making more purchases, large-allotment households make larger average purchases, as shown in Exhibit 2-12. Households that receive \$50 or less in benefits spend an average of \$7.90 on each purchase. In contrast, households that receive more than \$160 per month of benefits spend more than twice as much per purchase, averaging \$16.83.

Although this variation is substantial, it is somewhat less than the variation in number of purchases. The mean number of purchases is 5 times higher for households in the largest allotment category (13.5) as for those with the smallest allotments (2.7).

Examining the distribution of the value of purchases shows a striking similarity among all households, irrespective of benefit amount. Approximately 50 percent of all households' purchases are for less than \$5. An additional 20 percent are for amounts between \$5 and \$10. The main difference exists in the distribution of purchases greater than \$10. For households that receive less than \$50 a month, most of the larger purchases are for less than \$25. A significant proportion of the purchases of households that receive more benefits are for \$50 or more.

Regardless of allotment amount, most households combine various types of purchases in spending their monthly food stamp benefits, according to the figures in Exhibit 2-13. Only households with \$50 or less are likely to

¹See Appendix B, Exhibit B-2.2.

Exhibit 2-12

Value of Purchases During Month,
by Allotment Amount

Value of Purchases	Allotment Amount			
	\$50 or less (N=1921)	\$51 to \$100 (N=5405)	\$101 to \$160 (N=7249)	\$161 or more (N=9571)
Less than \$2.50	28.9%	29.6%	28.1%	23.6%
\$2.50 to 4.99	21.0	22.8	23.1	22.5
\$5.00 to 9.99	19.8	19.0	19.0	20.4
\$10.00 to 24.99	24.8	15.5	14.9	16.6
\$25.00 to 49.99	5.4	7.2	6.3	7.4
\$50.00 to 99.99	0.2	5.9	6.0	6.1
\$100.00 or more	<u>---</u>	<u>0.2</u>	<u>2.7</u>	<u>3.5</u>
	100.0%	100.0%	100.0%	100.0%
Average Purchase Value	\$7.90	\$11.46	\$14.78	\$16.83

Source: Transaction records (10% random sample), N=24,146 purchases.

Exhibit 2-13

Shopping Patterns of Food Stamp Recipients,
by Allotment Amount

Size of Purchases Made During the Month	Allotment Amount			
	\$50 or less (N=704)	\$51 to \$100 (N=802)	\$101 to \$160 (N=807)	\$161 or more (N=797)
All small pur- chases (less than \$5.00)	6.7%	0.4%	---	---
All medium-sized purchases (\$5.00- 24.99)	47.3	1.9	0.1	---
All large pur- chases (greater than \$25.00)	5.5	16.3	8.2	5.1
Small and medium- sized purchases	31.1	21.7	6.4	1.6
Small and large purchases	4.0	8.9	9.4	4.1
Medium-sized and large purchases	3.0	16.1	16.1	12.9
Small, medium, and large pur- chases	<u>2.4</u>	<u>34.8</u>	<u>59.7</u>	<u>76.2</u>
	100.0%	100.0%	100.0%	100.0%

Source: Case-level records, N=3,110 households (created from the 10% transaction sample).

spend all their benefits in purchases of a single size (mainly \$5-25). Households that receive over \$100 in benefits make more large purchases than other households, but they tend to combine the large purchases with small and medium-sized ones.

Thus, the amount of a household's allotment affects both the average purchase size and the number of purchases per month, but has little effect on the size distribution of the purchases. The size of a household's food stamp allotment depends on the household's size and amount of other income, and both factors seem to come into play in determining benefit use. Larger average purchases among households receiving high benefit levels doubtless stem partly from the larger number of people at each meal. The relatively small number of purchases per month made by households receiving less than \$50 in monthly benefits is due partly to the fact that more of their food shopping is probably being done with cash.¹

2.4 VARIATIONS IN PATTERNS BY HOUSEHOLD CHARACTERISTICS

The characteristics of households receiving food stamps vary from location to location. In some states, for example, a high proportion of food stamp recipients also receive Aid to Families with Dependent Children and other forms of public assistance (PA), while other states have mainly non-Public Assistance (NPA) households. Demographic characteristics of households, such as their size and age composition, also vary. System designers therefore need to know whether these household characteristics are related to purchase patterns in order to establish requirements for future EBT systems.

System designers also need to make sure that an EBT system does not adversely affect particular segments of the food stamp population. Some groups, such as the elderly, handicapped, non-English speakers, and those with low levels of education, have been considered to be potentially "at risk." In the study of the overall impacts of the Reading EBT system, none of these groups were, by their own reports, adversely affected by the EBT system.² The

¹Food Stamp benefits cover only 22 percent of the expected food needs of households receiving less than \$50 per month. Benefits cover 70-80 percent of the needs of other allotment groups. This calculation uses The Thrifty Food Plan value, referenced above to estimate a household's total food needs.

²William Hamilton, op. cit., Chapter 6.

examination of benefit use patterns provides another perspective from which to look for problems. If certain groups were having particular difficulty with the EBT system they might make fewer purchases or demonstrate unusual patterns of benefit utilization.

Examining how the number of purchases per month varies by demographic and household characteristics (within allotment amount) reveals a few interesting differences (Appendix B, Exhibit B-2.3). Because of the large sample sizes, practically all the observed differences concerning race, public assistance, and household size are statistically significant. Only a few are substantively interesting, however. Blacks who receive over \$100 in benefits per month make 2-3 more purchases than whites and 3-5 more purchases than Hispanic households. Public assistance recipients make 1-2 more purchases than those not receiving public assistance. Except among the lowest and highest allotment groups, larger households make fewer purchases than smaller households.

Among the groups considered potentially "at risk," the handicapped and non-English speakers do not behave differently than their counterparts. Those recipients over 50 years old actually make more purchases than younger recipients. Those with low levels of education make about 2 fewer purchases per month than those with more education. None of these patterns seem to suggest utilization problems.

The observed differences in mean purchase numbers may be due to relationships among the various factors. To control for such effects, we performed a multiple regression analysis, in which the dependent variable is the total number of purchases made during the month per \$100 in benefits received. The dependent variable is measured in this way to control for the effects of allotment amount on the number of purchases. Explanatory variables include the demographic and household characteristics discussed above. Exhibit 2-14 presents the results.

The multivariate analysis shows that few demographic or household characteristics affect the number of food stamp purchases a household makes. The regression coefficients presented in the table show the effect of a given characteristic on the total number of purchases the household makes. The three coefficients marked with asterisks are the only ones that are statistically significant. Households in which the head was over 50 years old

Exhibit 2-14

Regression Model for Total Number of Purchases
Per Month Per \$100 of Benefits^a

Intercept	10.71
Black	.74 (.95)
Received public assistance	-.43 (.77)
Less than 30 years old	.47 (.86)
50 or more years old	2.20* (1.09)
Handicapped	1.55 (.96)
Non-English speaker	-.46 (.82)
Less than 9 years education	-.75 (.88)
Number of persons in household	-1.16* (.24)
Employed	.58 (1.05)
Male	3.79* (.96)
Children help shop	.50 (1.25)
Other adults help shop	.18 (1.03)
R ²	.19

Statistical significance: *, P < 0.05.

Note: Standard deviations are in parentheses.

Source: Household-level records merged with data from the recipient surveys, N=393 households.

^aDependent variable = Number of Purchases/(Benefits/100)

make 2.2 more purchases per \$100 of benefits than other households. These households may have more time to shop or less tolerance for long shopping trips than other households. The more persons in the household, the fewer purchases made each month, probably reflecting the larger quantity of food needed per meal. Finally, households headed by males make more purchases per month than female-headed households. The reasons for this are unclear, but may be related to time available for large shopping trips.

To get an idea of the effect that variations in the characteristics of states' food stamp caseloads might have on the size of the EBT system required, we computed the mean number of purchases that would be expected given the age and household size of the caseload in different states.¹ We computed the expected mean in the state with the highest proportion of recipients aged 50 or more and in the state with the lowest proportion. The proportion of food stamp recipients 50 or more years of age was 41.0 percent in Mississippi and 10.4 percent in California (in Reading, the proportion was 24.6 percent). Holding all other variables constant, we would expect the mean monthly number of purchases per household per \$100 of benefits to equal 8.6 in California, and 9.3 in Mississippi.² These are both within half a purchase of the Reading subsample mean of 8.9 purchases per household.

The effect of variations in household size are a little larger. In 1984, California also had the greatest mean number of persons per food stamp household (3.5), nearly 1 more member than Reading's average of 2.8. At the other extreme, there were 2.3 members in the average food-stamp-assisted family in Nevada. Holding all other variables constant as above, the mean monthly number of purchases in California and Nevada are predicted to be 8.1 and 9.5, respectively.

Thus, according to these estimates, the characteristics of a states' caseload might affect the transaction volume by as much as 10 percent. It is not possible to predict precisely the expected differences, since we do not have data on all the demographic and household characteristics of different

¹State data came from: Integrated Quality Control System tapes, Food Stamp sample, Fiscal Year 1984.

²We adjust the expected mean by the variable's regression coefficient (Exhibit 2-14) multiplied by the increment in the proportion of older food stamp recipients. For example, the predicted mean in Mississippi is: $8.9 + (2.2) \times (.41 - .246) = 9.3$.

caseloads. These results do suggest, however, that EBT system designers should test the effect that an area's caseload will likely have on necessary system capacity during the initial planning stage.

2.5 CONCLUSIONS

Several clear patterns characterize food stamp recipients' benefit utilization. First, households make most of their purchases in the two weeks following issuance. By the end of the second week, they have made 80 percent of their purchases and redeemed 90 percent of the food stamp benefits they eventually use.

Second, households use their benefits to make a variety of purchases. Over half of the purchases are for amounts less than \$5. Thus, households seldom use their benefits to make one relatively large shopping trip a month. More often they combine some large purchases and a larger number of small ones.

The more benefits a household receives, the more shopping trips its members make, and the larger their average purchase. However, even households that receive relatively high levels of benefits make a variety of large and small purchases.

Finally, some demographic group appear to have different system utilization patterns than other groups. Under some circumstances, these differences might affect the necessary system capacities. Therefore, the impact of an area's caseload characteristics needs to be examined during the system design phase.

Chapter Three

PATTERNS OF BENEFIT EXHAUSTION

Chapter Three

PATTERNS OF BENEFIT EXHAUSTION

The bulk of all benefit redemption occurs within two weeks of issuance, as indicated in Chapter 2. This suggests that some households use up their full month's food stamp allotment quickly. On the other hand, purchases occur even in the last few days of the month, showing that at least some households have not exhausted their benefits up to that point.

This chapter focuses more directly on the question of when recipients exhaust their benefits. In contrast to Chapter 2, which examined total redemption activity during the month, this analysis is centered on the monthly food stamp allotment. A household's total purchases during a month may be exactly equal to the allotment, and often are. However, households sometimes spend less than the total allotment and carry the balance forward into the next month. If the household has a positive balance from a prior month, and uses both the stored benefits and the new allotment, its redemptions for the month will exceed its allotment. In examining patterns of benefit use, then, we must ask whether as well as when the household exhausts its benefits.

Like the data on purchase patterns, information on benefit exhaustion is useful to potential designers of EBT systems. It is useful to know, for example, what proportion of the caseload can be expected to carry non-zero balances forward from one month to the next. The necessary system capacity could be affected substantially if households store their benefits for several months then spend them all in one month.

In addition, and perhaps more importantly, this information provides a previously unavailable perspective on food stamp recipients' use of their benefits. People familiar with the Food Stamp Program can recount anecdotes on the one hand of recipients exhausting their benefits in two or three days with the implication that they go hungry the rest of the month, and on the other hand of recipients saving up thousands of dollars in coupons. Such anecdotes are sometimes used to support arguments that the Food Stamp Program either fails to meet household's needs or exceeds them.

The data from the EBT demonstration cannot answer the question of how well the program meets recipients' needs. However, it can provide a perspective on the anecdotes, by showing what proportion of the caseload exhausts benefits quickly and what proportion carries some forward. Neither behavior can be taken as direct evidence of need, however. Food stamp benefits are intended to represent only a part of the food budget for most households, and spending that part of the budget early in the month does not necessarily mean the recipients will be hungry late in the month. Similarly, numerous situations other than a general absence of need may prevent a household from redeeming all of its benefits in a particular month. For example, the recipient may be in the hospital for part of the month, or visiting family out of town, or even saving in anticipation of a special need, like buying extra food for Christmas.

The first section of the chapter examines how quickly households in the EBT demonstration use their allotments, and when during the month they exhaust them. It also examines how often households carry benefits over from one month to the next, and what proportion of benefits they carry forward.

If some groups of recipients exhaust their benefits more quickly than other groups, this might affect the design of EBT systems in different areas of the country. Differences in benefit exhaustion patterns might also indicate differential ability of the Food Stamp Program to meet the needs of varying demographic groups. The second section of the chapter therefore examines differences in exhaustion patterns depending on demographic and other household characteristics.

3.1 OVERALL PATTERNS OF BENEFIT REDEMPTION AND EXHAUSTION

In general, households redeem their food stamp benefits quite quickly. Four days after receiving the monthly allotment, the average household has used half of its benefits, as Exhibit 3-1 shows.¹ The average

¹In this table, and the other tables in the chapter, only households that redeem at least some benefits during the month are included. The 2 percent of households that make no purchases during an average month are excluded here, but covered in the analysis in Chapter 5. In addition, the sample excludes households that receive more than one issuance or receive an issuance after the regular issuance date. Including case months in which households receive more than one issuance increases the sample size by 2.7

Exhibit 3-1

Patterns of Food Stamp Redemption
Throughout Issuance Month

Benefits Redeemed, Cumulative through:	Cumulative Percent of Allotment, Average
Issuance Day	19.1%
Day 2	34.0
3	43.9
4	53.2
5	59.9
6	65.7
7	69.5
Week 2	89.1
3	97.9
End of Month	103.0% ^a

Source: Case-months records, N=30,424. Covers the period from February-November 1985.

^aExceeds 100% because households spent less than their allotment in the case months excluded from the analysis, e.g., the case months in which no purchases were made.

household spends 70 percent of its allotment by the end of the first week, and 90 percent by the end of the second week.

In the case months included in this analysis, households spend, on average, a little over 100 percent of their allotment by the end of the month. This occurs because the analysis excludes those months in which households make no purchases, and therefore use none of their available benefits. For any given household, of course, redemptions over the course of its participation in the program must total no more than 100 percent of its cumulative allotments. In a particular month, however, a household can spend more than its monthly allotment if it carried over some benefits from a previous month.

Not all households behave like the average, as Exhibit 3-2 shows. For example, about 5 percent of the households spend all their benefits on issuance day, but more than half spend nothing at all that day. By the end of the second week, a third of the households have redeemed their full allotment and another third have spent at least 90 percent, but the remaining third still have a substantial proportion of their allotment remaining.

At the end of the average month, a somewhat surprising 35 percent of all households have not spent the full amount of their allotment. In many of these cases, however, the dollar or percentage amount remaining is very small. The next analysis therefore takes into account these very small balances.

Benefit Exhaustion. The preceding analysis showed that a majority of households redeem their benefits fairly quickly. Looking more closely at the timing of benefit exhaustion, the first column of Exhibit 3-3 shows that almost 20 percent of the households completely exhaust their benefits by the end of the first week. An additional 13-18 percent of households exhaust their benefits in each of the succeeding weeks of the month, so that by the end of the month, 65 percent have spent all their benefits. The remaining 35 percent of the households carry over some of their benefits into the next month.

¹ (cont'd) percent and including case months in which households receive one non-regular issuance adds 1.8 percent. Including these households in the analyses does not appreciably change the reported patterns of benefit exhaustion.

Exhibit 3-2

Distribution of Food Stamp Benefit Redemption

Percent of Benefits	Benefits Redeemed, Cumulative Through:					
	Issuance Day	Day 3	Week 1	Week 2	Week 3	End of Month
0%	55.2%	26.5%	9.5%	3.1%	1.0%	---
1-9	11.3	6.2	1.4	0.2	0.1	0.1
10-19	6.5	7.0	2.6	0.5	0.2	0.1
20-29	3.8	6.0	3.7	0.8	0.2	0.1
30-39	2.9	5.4	4.9	1.3	0.4	0.2
40-49	2.6	5.2	5.3	2.2	0.7	0.2
50-59	2.5	5.3	6.3	3.5	1.1	0.3
60-69	2.7	5.7	7.2	4.3	1.7	0.5
70-79	2.8	6.5	8.2	6.4	3.1	1.0
80-89	2.8	7.3	10.6	8.7	5.5	2.2
90-99	3.4	10.0	20.9	32.0	34.6	31.0
100 or more	4.5	9.2	19.4	32.0	51.4	64.4
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Case-month records, N=30,424.

Exhibit 3-3

Timing of Food Stamp Benefit Exhaustion

Monthly Benefits Exhausted in:	Percent Totally Exhausting Benefits	Percent Virtually Exhausting Benefits ^a
First week	19.5%	27.2%
Second week	17.5	26.2
Third week	14.5	19.2
Fourth week	13.0	14.6
Did not exhaust	<u>35.5</u>	<u>12.7</u>
	100.0%	100.0%

Source: Case-month records, N=30,424.

^aVirtually exhausting benefits is defined as having no more than \$1 or 1 percent of total issuance remaining in food stamp account.

Because EBT purchases are for the exact amount of the sale, a recipient may complete a transaction with a very small amount of benefits remaining in the account. A recipient with a very small balance might reasonably consider this month's allotment "exhausted" and make no further EBT purchases until receiving the next allotment. The second column of Exhibit 3-3 therefore considers the redemption of all but \$1 or 1 percent of the allotment (a maximum of \$4 in this sample) as "virtual exhaustion" of benefits, and reexamines the timing of benefit use.

More than a quarter of all households exhaust or virtually exhaust their allotment in the first week of the average month. More than half do so by the end of the second week. Only 13 percent end the month with a balance exceeding \$1 or 1 percent of their allotment.

Recall that a household may fail to exhaust its monthly allotment for several reasons. Some may choose not to spend all their benefits, saving some for the future. Recipients who receive only small allotments may decide to spend several months' benefits at one time. Other recipients may be unable to spend their benefits because, for example, they are out of town or ill. We cannot determine from the EBT data how many of the households with a positive balance above \$1 or 1 percent chose not to use all their benefits and how many were unable to do so.¹

Benefits Carried Over. Households that do not spend their entire monthly allotment carry forward an average balance of only \$3.77, as Exhibit 3-4 shows. Sixty percent of the households that carry over benefits have less than \$1 remaining at the end of the month. Only 8 percent of the households that do not exhaust their benefits (about 3 percent of all households) have more than \$10 remaining at the end of average the month.

The benefits they carry forward generally account for a small percent of their total monthly allotment. About 80 percent of those households that do not exhaust their benefits carry over 5 percent or less of their monthly benefits (Exhibit 3-5). However, some households end the month with a sizeable proportion of their allotment unused. Approximately 7 percent of those who do not exhaust their benefits carry over more than 20 percent

¹There are no clear patterns in exhaustion by different demographic groups that would provide insight into this issue.

Exhibit 3-4

Value of Food Stamps Carried
Over from One Month to the Next

Value of Benefits Carried Over to Following Month	Percent of All Households	Percent of Households with Some Carryover
\$0	64.4%	--
\$0.01 - 1.00	21.3	59.9%
\$1.01 - 10.00	11.0	31.0
\$10.01 - 20.00	1.6	4.5
\$20.01 - 50.00	1.2	3.5
\$50.01 - 203.00	<u>0.4</u> 100.0%	<u>1.1</u> 100.0%
Mean	\$1.34	\$3.77
(s.d.)	(6.33)	(10.17)
Number of Case Months	30,424	10,815

Exhibit 3-5

Percent of Allotment Carried Over
From One Month to the Next

Value of Benefits Carried Over to Following Month, as Percent of Allotment	Percent of All Households	Percent of Households with Some Carryover
0%	64.4%	--
0.01 - 1.00%	20.2	56.8%
1.01 - 2.00%	4.0	11.2
2.01 - 3.00%	2.1	5.8
3.01 - 5.00%	2.2	6.3
5.01 - 20.00%	4.6	13.0
20.01 - 99.11%	<u>2.4</u> 100.0%	<u>6.9</u> 100.0%
Mean	1.7%	4.9%
(s.d.)	(7.2)	(11.4)
Number of Case Months	30,424	10,815

(although many of these households have quite small allotments). These households represent about 2 percent of the entire food stamp caseload in an average month.

Each month then, 2-3 percent of households leave a significant portion of their benefits unspent. This raises the question of whether some households habitually carry over benefits from one month to the next, or whether this is a special situation that occurs only once or twice for a single household. To address this issue, the analysis presented in Exhibit 3-6 links case months together to examine the redemption patterns of households during the entire time they received food stamps in the EBT demonstration.

Most households exhaust their benefits (within \$1 or 1 percent of its allotment) every month. About a third of the households experience one or two months in which they do not exhaust benefits. The remaining 10 percent of the households have 3 or more months in which they do not spend all their benefits, and 2 percent have at least 5 months in which they do not exhaust benefits. The results are similar when examining the percent of months in the demonstration during which the household does not exhaust its benefits. Thus, a small percentage of households relatively routinely redeem less than their full allotment, but most households use the entire allotment every month or almost every month.

3.2 VARIATIONS IN PATTERNS BY ISSUANCE AMOUNT AND HOUSEHOLD CHARACTERISTICS

The previous section showed that, while most households spend all their benefits each month, some households do not. This section examines the extent to which patterns of benefit exhaustion depend on the amount of benefits the household receives or other household characteristics.

The timing of benefit exhaustion does vary somewhat depending on the household's monthly allotment, but not as much as one might expect. Not surprisingly, households that receive relatively small allotments exhaust their benefits more quickly than households with large allotments. For example, 40 percent of the households that receive less than \$50 a month virtually exhaust their benefits in the first week, compared with only 18 percent of households that receive more than \$160 (Exhibit 3-7). This result follows from the finding in Chapter 2 that, as allotment amount increases,

Exhibit 3-6

Number of Months in Which Households Do Not
Virtually Exhaust Their Benefits

Number of months in which household did not virtually exhaust benefits:	Percent of Households
1	23.6%
2	10.8
3	5.6
4	3.6
5-9	1.9
Always virtually exhausted benefits	<u>54.5</u>
Total	100.0%

Source: Case-level records, N=4,476 households.

Exhibit 3-7

Timing of Food Stamp Benefit Exhaustion,
by Issuance Amount

Monthly Benefits Virtually Exhausted ^a	\$50 Or Less (N=6544)	\$51 to \$100 (N=8728)	\$101 to \$160 (N=7415)	\$161 or more (N=7737)
Cumulative through:				
First week	40.4%	29.5%	23.1%	17.5%
Second week	65.6	53.1	50.8	46.2
Third week	79.8	69.2	71.8	71.6
End of month	88.8	83.6	86.6	91.0
Did not exhaust	11.3	16.4	13.5	9.1

Source: Case-month records, N=30,424.

^aVirtually exhausting benefits is defined as having no more than \$1 and 1 percent of total issuance remaining in food stamp account.

households tend to make more purchases and to spread them throughout the month.

The differences among allotment groups diminish over the month, however. By the end of the month, no meaningful pattern is visible in the proportion of households that exhaust or virtually exhaust their benefits.

The likelihood that a household will not use all its benefits in a month does not depend, in general, on the household's characteristics (Exhibit 3-8). Households headed by whites and English-speaking persons have a somewhat greater propensity to carry forward benefits than other groups, but the differences are not very large. Small households are also more likely to carry forward benefits than large households. No other demographic characteristics affect whether a household exhausts its monthly allotment.

Households that rely mainly on the head of household for grocery shopping more often carry over benefits than households where children or other adults do much of the shopping. This pattern doubtless reflects, in part, the greater tendency for larger households to exhaust their benefits. It also may imply that household heads tend to be more cautious in their spending. In either case, it allays any concern that households depending on someone other than the household head would have difficulty shopping in the EBT system.

The previous section showed that most households use their entire allotment every month or almost every month, though a small percentage frequently carry over benefits from one month to the next. Those frequently carrying benefits forward tend to be small households and households receiving small monthly allotments. In addition, households headed by whites are slightly more likely to carry over benefits frequently than are black or Hispanic households.¹ None of these patterns suggest, however, that any demographic groups are having particular difficulty using the EBT system.

3.3 SUMMARY

Most households that receive food stamp benefits spend their entire monthly allotment in the first couple of weeks after receiving it. In any

¹See Appendix B, Exhibit B-3.1.

Exhibit 3-8

Percent of Households That Carried Over
More than \$1 or 1 Percent of Their Benefits,
by Household Characteristic

Household Characteristic	Percent of Subgroup Carrying Over Benefits	Number of of Case Months
<u>Race</u>		
White	15.0% ^a	14,823
Black	10.6 ^a	5,499
Hispanic or Other	10.5 ^a	10,088
<u>Received Public Assistance</u>		
Yes	12.2%*	16,224
No	13.4*	14,200
<u>Number in Household</u>		
1	15.0% ^b	10,596
2	15.2 ^b	6,004
3-4	11.0 ^b	9,711
5 or more	7.4 ^b	4,113
<u>Language</u>		
English speaking	14.9%*	2,282
Other	11.7*	946
<u>Age</u>		
Less than 30 years old	13.0%	1,314
30-49 years old	14.1	
50 or more years old	14.7	871
<u>Education</u>		
0-9 years	14.5%	931
Over 9 years	13.7	2,277
<u>Handicapped</u>		
Yes	14.1%	697
No	13.9	2,531
<u>Employed</u>		
Yes	15.6%	424
No	13.7	2,794
<u>Sex</u>		
Female	13.8%	2,740
Male	14.8	488
<u>Who does shopping?</u>		
Head of household only	15.2% ^c	2,492
Head and children	8.7 ^c	332
Head and/or other adults	10.4 ^c	404

Statistical significance of difference between subgroups: *, $p < 0.05$

Source: Case-month records merged with recipient data, when available, N=30,424.

^aDifference between White and Black and between White and other significant at 0.05 level.

^bStatistical significance: $p < 0.05$ except difference between 1 and 2 person households.

^cDifference between head only and head and children and between head only and head and/or adults significant at 0.05 level.

given month, only 13 percent carry over more than \$1 or 1 percent of their allotment into the next month. Examining the patterns of households during the course of their participation in the Food Stamp Program, over half spend

all their benefits every month they are in the program. An additional third of the households spend all their benefits in all but one or two months. About 6 percent of the households do not exhaust their benefits in four or more months.

From the perspective of a policy maker considering the utilization of program benefits, then, it is clear that the vast majority of households use all or nearly all of their benefits in the month they are issued, and most use them within two weeks of issuance. A very small fraction of households routinely end a month with significant benefits remaining. Carry over of benefits seems to reflect some special situation the household is experiencing. Thus, the likelihood of exhausting benefits is not closely related to any particular set of demographic or other household characteristics.

The perspective of an EBT system planner would focus on somewhat different aspects of the benefit exhaustion pattern. First, nearly half of the active household accounts in an EBT system may be idle in the second half of the issuance month (assuming all households receive their allotments on the same date). Second, a substantial portion of all accounts--about 35 percent, based on the this analysis¹--will carry some portion of their allotment from one issuance month to the next. Both factors must be taken into account in the design of EBT systems and monitoring procedures.

Chapter Four

NUMBER AND TYPES OF STORES FREQUENTED

Chapter Four

NUMBER AND TYPES OF STORES FREQUENTED

Food stamp recipients may redeem their benefits at any of the numerous types of food retail establishments that participate in the Food Stamp Program. Nationwide, this includes some 230,000 establishments, ranging from supermarkets to milk routes to drug treatment centers (see Appendix A.4).

A total of 162 retailers participated in the Reading demonstration, and about 125 accepted EBT benefits in an average month. Based on categorizations used in FNS records, the stores included 24 supermarkets, 87 grocery and specialty food stores, 24 convenience stores (including grocery/gasoline combination stores), and 27 other establishments including produce stands, variety stores, a milk route, and others. (Appendix A.4 provides more detail.)

National statistics provide information on the number of various kinds of stores participating in the Food Stamp Program and the benefits redeemed in each. They indicate, for example, that supermarkets make up about 15 percent of the participating stores, but account for 73 percent of all redemptions. In contrast, nearly 40 percent of participating establishments are grocery and specialty food stores, but only 18 percent of all benefits are redeemed in such stores.

These statistics can provide only very limited insight into recipients' behaviors. They do not reveal, for example, how many different stores or types of stores an individual household uses, or whether recipients make large purchases in some stores but small purchases in others.

The analyses in this chapter use the EBT system records of individual household purchases to address these issues. The general questions addressed are:

- How many stores and types of stores do households use to redeem their food stamp benefits?
- How many purchases do recipients make in each different type of store, and what is the average purchase amount?

- How do recipients distribute their food stamp shopping among different types of stores?
- To what extent do any of these factors vary by allotment amount or by household characteristics?

The answers to such questions can be useful to EBT system planners who are considering, for example, how much and what type of equipment to put in various types of stores. More generally, the information may provide a useful background for policy discussions about what kinds of establishments should be allowed or encouraged to participate in the Food Stamp Program.

4.1 NUMBER AND TYPES OF STORES USED

In a typical month during the Reading demonstration, households used their EBT benefits in an average of 3.1 stores (Exhibit 4-1). The number of stores used ranged up to 20, but in an average month, about two-thirds of the households shopped in 3 or fewer stores.

Households that shop in more stores make more total purchases than other households, as might be expected. Somewhat surprisingly, however, the number of purchases increases in an almost linear relationship to the number of stores visited. The average household makes about 2.7 purchases per store visited, regardless of the number of stores it uses.

This does not necessarily mean that a household's purchases are equally distributed among the stores used. For example, a household might make four purchases in one store, and one purchase in each of two other stores. As shown in the third column of the exhibit, however, recipients who use multiple stores usually spread the purchases out relatively evenly. The mean proportion of purchases made in the most-used store decreases as more stores are used. The distribution is also remarkably even among all stores used (Appendix B, Exhibit B-4.1). The principal store does not account for an overwhelming proportion of the number or value purchases; rather, all the stores used tend to be used to roughly the same extent.

Types of Stores Used. As in the nation as a whole, recipients redeem nearly three quarters of their EBT benefits in supermarkets, even though only 15 percent of the participating stores are supermarkets (Exhibit 4-2). Grocery stores redeem for about a fifth of the benefits, and the remaining few percent are redeemed in convenience stores and other establishments.

Exhibit 4-1

Number of Stores Frequented by
Food Stamp Households

Number of Stores Used Per Month	Percent of Case Months	Mean Number of Purchases	Mean Proportion of Purchases Made in Most Frequented Store ^a
1	25.3%	2.5	100.0%
2	21.1	5.4	57.0
3	18.7	8.5	40.1
4	14.3	11.2	29.9
5	9.1	13.5	26.1
6	5.1	15.6	20.4
7 or more	6.4	20.2	37.5
Overall mean = 3.1	Total = 100.0%	Overall Mean = 8.3	

Source: Case-month records, N=31,216.

^aFor complete distribution, see Appendix B, Exhibit B-4.1.

Exhibit 4-2

**Proportion of Total Number and Value
of Purchases by Store Type**

Store Type (% of stores)	Number of Purchases	Value of Purchases	Percent of Households Using Store Type ^a
Supermarket (14.8)	40.4%	74.2%	87.4%
Grocery (53.7)	35.3	18.1	56.8
Convenience (14.9)	16.2	5.4	32.7
Other (16.6)	7.0	2.4	15.6
(100.0%)	100.0%	100.0%	

Source: Case-month records, N=31,216.

^a The mean percentage of case months in which store type was visited at least once.

Note: For the distribution of number of EBT transactions made each month per store by store type, see Appendix A, Exhibit A-6.

Supermarkets dominate the other statistics in Exhibit 4-2 as well. A plurality of 40 percent of all purchases occur in supermarkets. Nearly 90 percent of all participating households make at least one EBT purchase in a supermarket in an average month, although many make purchases in other types of stores as well.

The EBT system may tend to reinforce the recipients' predominant choice of supermarkets for redeeming food stamp benefits. Among the stores in Central Reading, the proportion of benefits redeemed in supermarkets increased when the demonstration began, and the proportion redeemed in grocery stores declined. Exhibit 4-3 shows this pattern.

Despite the predominant use of supermarkets, substantial EBT activity occurs in the other store categories also. Over half the households make some use of grocery stores during the average month, and a third of all purchases are made in such stores. Even the "other" category of stores is frequented by about a sixth of the households per month, and accounts for 7 percent of all purchases.

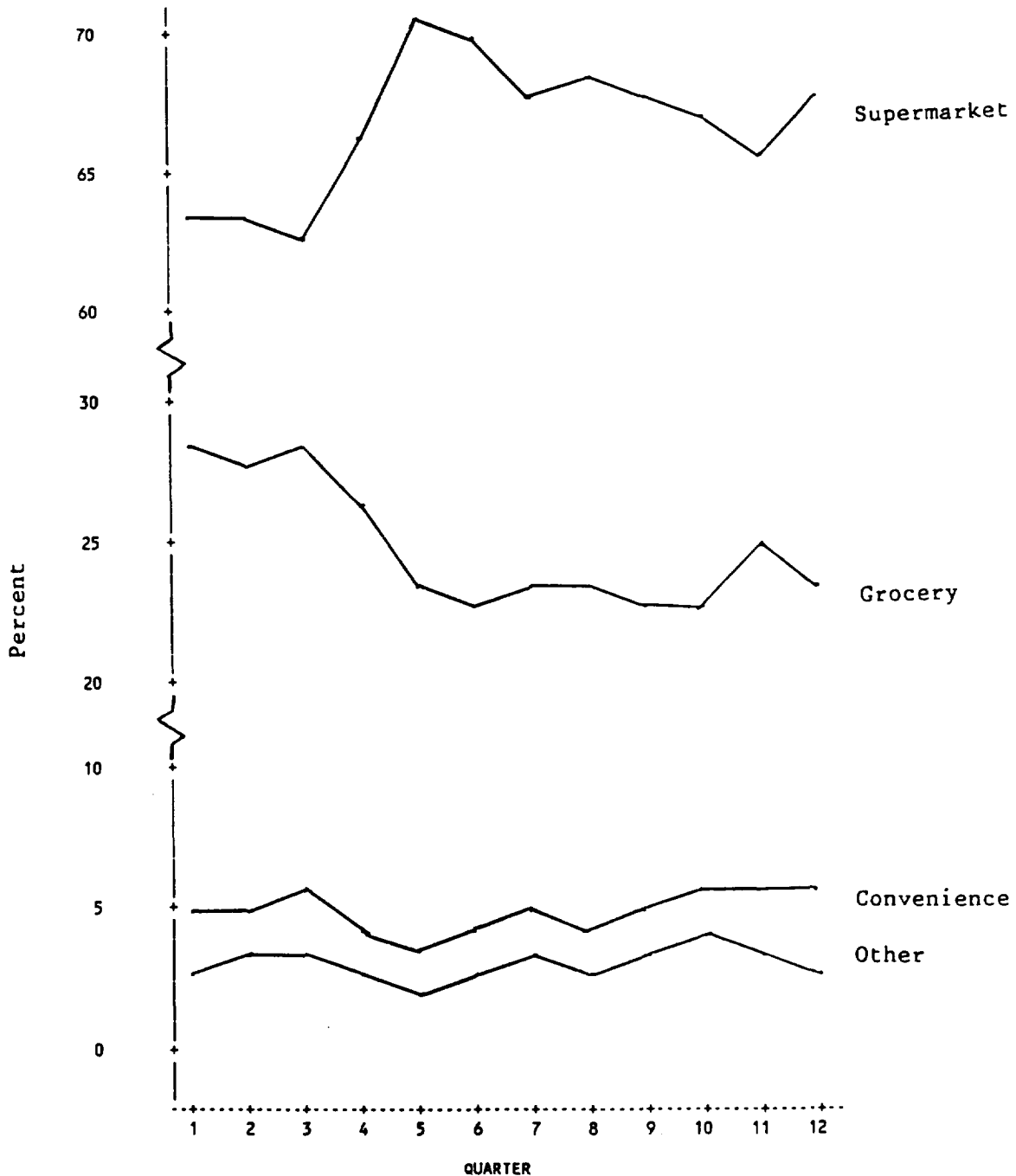
Because so much redemption activity is concentrated in supermarkets, it is worth examining the households that do not use supermarkets at all or infrequently. Only about 5 percent of the households in the EBT demonstration never redeemed benefits in a supermarket during the period of their participation. About 10 percent, however, rarely or never used supermarkets.¹ This group is compared in Exhibit 4-4 to the households that often use supermarkets.

The households rarely using supermarkets differ strikingly from the frequent supermarket users. The non-users tend to be small households, typically single-person households, that receive small allotments and do not receive public assistance. It is reasonable to infer that these small households are buying food in small quantities, for which they patronize the corner grocery rather than traveling to a supermarket. It is possible, too, that these households include a disproportionate number of elderly or

¹A household is considered to use supermarkets "rarely" if it makes an average of less than 0.5 purchases per month in a supermarket--that is, if its total supermarket purchases during the period of its participation in the demonstration is less than half the number of months it participated.

Exhibit 4-3

Percentage of Total Food Stamp Redemptions by Store Type in Central Reading: Quarterly 1984-1986



Source: FNS tapes containing monthly activity summaries by store.

^a Quarter 1 corresponds to January-March, 1984,..., Quarter 12 corresponds to October-December, 1986.

Note: The demonstration began in Quarter 4.

Exhibit 4-4

Characteristics of Households That
Rarely Shop in Supermarkets

Characteristic	Percent of Households That Rarely Shop in Supermarkets ^a (n=446)	Percent That Routinely Shop in Supermarkets (n=4033)	Population Percent
Allotment Amount:			
\$50 or less	55.2%*	16.7%*	20.5%*
\$51 to \$100	31.8	31.1	29.5
\$101 to \$160	7.0 ^b	24.9 ^b	24.3 ^b
\$161 or more	6.1 ^b	27.3 ^b	25.7 ^b
Ethnicity:			
White	57.6% ^c	47.7%	49.7% ^c
Black	15.9 ^d	17.7 ^d	17.1
Hispanic or other	26.5 ^b	34.6 ^b	33.2 ^b
Public Assistance:			
Yes	27.6%*	55.0%*	51.9%*
No	72.4*	45.0*	48.1*
Household Size:			
1	75.8%*	32.2%*	39.2%*
2	11.9 ^b	21.0 ^b	20.8 ^b
3 or 4	8.5*	33.7*	28.6*
5 or more	3.8*	13.1*	11.4*

Source: Case-level records, N=4,479 households.

^aHouseholds that made at least one purchase in a supermarket during at least 50% of the months they participated in the demonstration are considered "routine" users; others are considered "rarely" to shop there.

^bDifferences between households that rarely shop and those that routinely shop in supermarkets and between those that rarely shop in supermarkets and the demonstration population significant at 0.05 level.

^cDifference between households that rarely shop in supermarkets and the demonstration population significant at 0.05 level.

^dDifference between households that rarely shop in supermarkets and the demonstration population significant at 0.05 level.

Statistical Significance: *, p<0.05 for comparison of groups within characteristic classifications.

disabled.² Section 4.3 shows that such households tend to use only a single type of store, possibly choosing the store nearest to their home, for virtually all of their shopping.

This preliminary examination suggests that the patterns of benefit use in different types of stores reflect varying kinds of shopping activity by different kinds of households. The next section will examine these variations further.

4.2 SHOPPING ACTIVITY WITHIN TYPES OF STORES

Households make most of their EBT purchases in supermarkets and grocery stores. In an average month, each household makes 3.3 of its 8.3 total purchases in supermarkets, and almost as many in grocery stores (3.0). The remaining 2 purchases occur in convenience and "other" stores (Exhibit 4-5).

Among households that use any given type of store, however, the average number of purchases in each store type is more similar. Households using grocery stores average slightly over 5 purchases per month in these stores, while the average in the other kinds of stores is about 4 purchases.

Despite the similarity in numbers of visits, the average purchase value varies dramatically. Supermarket purchases average about \$25--almost 4 times the grocery average of \$6.80 and 5 1/2 times the average in convenience and "other" stores. The high average purchase value in supermarkets, together with the fact that nearly all households use supermarkets, is the main reason that such a high proportion of benefits is redeemed in supermarkets.

The high average value of supermarket purchases might reflect a pattern of "stocking up" early in the month. If this were the case, then supermarket redemptions would be particularly concentrated in the period just after benefit issuance. In contrast, more spending in the other store types might occur later in the month as households buy, for example, milk and other more frequently purchased goods.

²The number of households not using supermarkets is too small to allow examination of age, disability, and other characteristics measured only in the recipient survey.

Exhibit 4-5

Mean Number and Value of
Purchases by Store Type

Store Type	Number of Purchases Per Month Excluding Recipients Who Didn't Use Store Type	Number of Purchases Per Month (All Recip- ients)	Value of Purchase
Supermarket	3.8	3.3	\$24.97
Grocery	5.3	3.0	6.79
Convenience	4.1	1.3	4.50
Other	3.7	0.6	4.58
Overall:		8.3	\$14.32

Source: Case-month records, N=31,216.

The data provide some support for this hypothesis. By the end of the first week, 75 percent of the total monthly spending that will occur in supermarkets has taken place (Exhibit 4-6). Grocery, convenience, and "other" stores during the same period see about 65 percent, 59 percent, and 53 percent of their monthly redemptions, respectively. In the remaining weeks, the proportion of the month's redemptions is lower in supermarkets than other stores. Roughly the same pattern exists for the number of purchases as for the total value of redemptions (Appendix B, Exhibit B-4.2). In short, while households concentrate their redemptions in the beginning of the month in all types of stores, they shift emphasis from supermarkets toward other types of stores as the month progresses.

Patterns of Store Types Used. The preceding analysis suggests that different households redeem their benefits in different types of stores, and that many households use more than one store type. To examine these patterns more directly, we sorted the records according to the types of stores in which each household made EBT purchases in each month. There are 15 possible combinations: 4 ways to use exactly 1 type of store, 6 ways to use 2 types, 4 ways to use 3, and 1 way to visit all 4 types of stores (see Exhibit 4-7).

Overall, about 40 percent of the households use only one type of store to redeem their benefits. Most of these households use only supermarkets (29 percent), with grocery stores a distant second at 8 percent. About 36 percent shop in two kinds of stores, and 20 percent shop in some combination of three store types. Less than 5 percent manage to frequent all four kinds of stores during the month.

The fifteen combinations can be reduced to six patterns that account for nearly 95 percent of all case months of redemptions, as shown in Exhibit 4-8. Two of the patterns involve using only one store type: either supermarkets or grocery stores. Households exhibiting these patterns tend to have relatively small allotments (averaging \$50 to \$80) and make relatively few purchases (3.2 to 4.4). The remaining four patterns all involve supermarkets plus one or more other types of stores. All are used by households with relatively large average allotments (\$130 to \$150) and large average numbers of purchases (8.6 to 19.6).

Regardless of the combination of store types used, people spend more benefits per purchase in supermarkets than in other types of stores. However,

Exhibit 4-6

Proportion of Spending by Day/Week of Month

	Store Type			
	Supermarket	Grocery	Convenience	Other
Day 1	22.2%	20.5%	18.0%	10.3%
2	17.6	13.2	9.5	9.0
3	12.3	8.6	7.7	5.9
4	8.7	7.9	6.5	10.8
5	5.7	5.7	6.5	7.0
6	5.4	5.0	6.2	6.2
Week 1	75.1%	64.9%	58.9%	53.1%
2	15.4	22.0	23.6	25.5
3	6.1	9.2	11.1	13.0
End of Month	3.4	4.0	6.3	8.5

Source: Transaction records (10% random sample), N=24,206 purchases.

Exhibit 4-7

Number and Value of Purchase in All Possible Patterns of Store-Type Combinations

Percent Using Combination	STORE TYPE			
	Supermarket	Grocery	Convenience	Other
29.0%	3.2 \$25.47			
22.0	3.7 \$26.75	5.8 \$5.48		
13.6	4.4 \$24.31	5.2 \$5.78	4.3 \$3.97	
9.7	5.0 \$22.65		3.8 \$4.68	
8.2		4.4 \$11.31		
5.2	4.7 \$18.66	6.3 \$5.24	4.5 \$3.49	4.1 \$3.87
4.8	3.7 \$24.93	5.8 \$6.10		3.4 \$4.53
1.7	4.6 \$23.71			3.4 \$4.80
1.6	5.9 \$19.81		3.6 \$4.63	4.2 \$4.45
1.4		7.3 \$8.02	4.3 \$6.49	
1.2		7.2 \$7.54		3.0 \$4.66
0.7		10.0 \$6.41	3.8 \$5.36	4.2 \$5.11
0.6			3.7 \$16.38	
0.5				3.9 \$11.18
0.1 100.0%			4.5 \$6.79	3.4 \$6.25

Key: Each box contains the mean number and value of purchases made in that store type within each combination of store types.

Source: Case-month records, N=31,216.

Exhibit 4-8

The Six Most Frequently Occurring Patterns
of Store-Type Usage

Percent of Households	Store Type				Mean Allotment Amount
	Supermarket	Grocery	Convenience	Other	
29.0	3.2 \$25.47				\$80.70
22.0	3.7 \$26.75	5.8 \$5.48			129.40
18.4	4.2 \$24.28	5.4 \$5.86	4.0 \$4.11		149.33
11.4	4.9 \$22.80		3.7 \$4.75		129.01
8.2		4.4 \$11.31			50.26
5.2	4.7 \$18.66	6.3 \$5.24	4.5 \$3.49	4.1 \$3.87	149.17
94.2 percent of all case months fall in one of these six categories.					

Key: Each box contains the mean number and value of purchases made in that store type within each combination of store types. The means for households that used a supermarket and a convenience store are very close to those in the supermarket and "other" combination. In order to simplify the table, these 2 patterns are combined into a single one--supermarket and convenience or "other." The same was done to form the combination supermarket and grocery and convenience store or "other."

Source: Case-month records, N=31,216.

the size of the average supermarket purchase declines somewhat as more types of stores are used. Average purchase amounts in other types of stores are remarkably consistent across patterns, with one exception. Households that redeem all their benefits in grocery stores make purchases averaging \$11, compared with \$5 to \$6 in other patterns. Purchases in convenience stores and other establishments average \$4 to \$5 in all of the common patterns (although averages also are higher in those stores when they are the only type used).

The consistently large average purchases in supermarkets suggest that the supermarket is in some sense an "anchor" in the benefit redemption pattern. This interpretation is supported by the data in Exhibit 4-9, that shows the proportion of benefits spent in each type of store. Of course, if only 1 store type is used, 100 percent of a household's benefits is spend in that category. In all of the remaining four combinations, recipients spent over half of their benefits in supermarkets. Grocery stores, when they are used, consistently account for around a quarter of the benefits, and other store types for 10 to 15 percent.

4.3 PATTERNS OF STORE USAGE BY ALLOTMENT AMOUNT AND HOUSEHOLD CHARACTERISTICS

The lower average allotments for households using just one type of store, seen in Exhibit 4-8, suggests the possibility that allotment amounts may influence the pattern of store usage more generally. This section investigates the possibility more directly, examining the allotment amounts and household characteristics of households that exhibit differing patterns of store usage.

Households with small allotments (especially allotments less than \$50) tend to redeem their food stamp benefits in only one type of store (see Exhibit 4-10). Three quarters of the households with allotments under \$50 use supermarkets only or grocery stores only, compared with 39 percent of the households with allotments of \$51 to \$100 and only 15 percent of the households with more than \$160 in benefits. Households with larger allotments more often use three or four store types than those with small allotments. The most dramatic distinction, however, concerns the use of one store type as opposed to more than one.

Exhibit 4-9

Percentage of Monthly Spending in
the Six Common Store Type Usage Patterns

Pattern	Store Type			
	Supermarket	Grocery	Convenience	Other
1	100			
2	73.7	26.3		
3	66.1	22.3	11.6	
4	85.3		14.7	
5		100		
6	55.0	22.9	11.3	10.8

Source: Case-month records, N=31,216.

Exhibit 4-10

Percent of Households Using Various Store Type Combinations
by Allotment Amount

	I \$50 or less (N=6,487)	II \$51 to \$100 (N=8,808)	III \$101 to \$160 (N=7,660)	IV \$161 or more (N=8,261)
Supermarket only	50.4%	32.0%	24.0%	13.5%
Supermarket and Grocery	10.4	22.2	25.5	27.8
Supermarket and Grocery and Con- venience or "Other"	2.5	15.2	21.9	30.7
Supermarket and Convenience or "Other"	3.8	11.9	15.6	12.9
Grocery Only	24.7	6.7	2.8	1.7
All Four Types	0.6	4.2	6.4	8.7
Other Patterns Combined	7.6	7.8	3.8	4.7
Total	100.0%	100.0%	100.0%	100.0%

Source: Case-month records, N=31,216.

Underlying the large-allotment households' use of multiple store types is a general tendency for households with more benefits to redeem them through more purchases in more stores. Chapter 2 indicated that larger allotments are redeemed mainly through more purchases, although also through somewhat larger average purchases. Recipients clearly could make more purchases without visiting new stores, but the data show that the additional purchases translate fairly directly into additional stores visited. Households with allotments of \$50 or less make an average of 2.7 purchases in 1.5 stores. The three larger-allotment groups make 7.0 purchases in 2.9 stores, 9.0 purchases in 3.5 stores, and 13.5 purchases in 4.2 stores, respectively.

Households with larger allotments tend to spend a higher proportion of their benefits in supermarkets, regardless of the combination of store types they used. (The proportion of total spending in each store-type combination, broken down by allotment amount, is shown in Exhibit B-4.6 of Appendix B.) This may reflect a need for larger purchases to feed larger households. It may also reflect a relative absence of other income sources, and hence a greater dependence on the food stamp benefits for both the primary and supplemental food purchases.

The use of only one store type to redeem benefits is closely associated with the presence of older or disabled recipients. Households headed by persons over age 50 and by persons reporting some form of disability are much more likely than others to use supermarkets only (47 to 52 percent) or grocery stores only (18 to 19 percent), as shown in Exhibit 4-11. It appears that this pattern reflects the small households and allotments that these households tend to have, at least as much as physical limitations that may cause them to shop at a limited number of conveniently located stores. (See Appendix B, Exhibit B-4.7).

None of the other household characteristics examined are meaningfully related to the pattern of store types used to redeem benefits. These include sex, education, primary language, and employment status of the head of household, as well as the types of people within the household doing the food stamp shopping.

Exhibit 4-11

Characteristics of Households That Use the
Six Most Popular Store Type Combinations

	Characteristic				
	Disabled		Age of Head of Household		
	Yes (N=669)	No (N=2409)	Under 30 (N=991)	30-49 (N=1249)	50 or above (N=830)
Supermarket only	46.9%*	29.6%*	23.4%*	28.5%*	52.2%*
Supermarket and Grocery	16.6*	26.4*	25.3	28.5 ^a	16.8 ^a
Supermarket and Grocery and Convenience or "Other"	10.3*	21.0*	25.4*	20.8*	7.6*
Supermarket and Convenience or "Other"	5.4*	12.4*	17.1*	11.5*	2.8*
Grocery Only	17.6*	4.8*	0.7*	5.6*	18.8*
All Four Types Other Combined	3.1*	5.8*	8.1*	5.1*	1.9*
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Case-month merged with recipient survey data, N=3,078.

^aDifference between household heads aged 30-49 and those 50 or above significant at 0.05 level.

Statistical significance: *, $p < 0.05$ for comparison of groups within patterns of store usage.

4.4 SUMMARY

The average household in the EBT demonstration redeemed food stamp benefits in about 3 different stores per month. For the vast majority of households, at least one of the stores is a supermarket, and most households also redeem benefits in one or more other types of store. Supermarkets account for nearly 75 percent of the redemptions, not only because more households use supermarkets than other store types but also because the average purchase in supermarkets (\$25) is much larger than elsewhere (\$5 to \$7).

About 40 percent of the households use just one kind of store. These tend to be small households with small allotments, often with an elderly or disabled head of household. Most of these households use only supermarkets. However, the same kinds of households predominate in the small portion of the population (around 10 percent) that almost never use supermarkets. For these households, it appears that small allotments and the absence of a need to buy in bulk (which is often easier and less expensive in supermarkets) combines with a preference for shopping at a limited set of stores (perhaps conveniently located stores) to produce distinctive redemption patterns.

More commonly, households redeem their benefits in at least one supermarket plus one or more other types of store. Although several different combinations occur, all are anchored by the supermarket, which accounts for 55 to 85 percent of benefit redemptions. Households that use grocery stores in addition to supermarkets typically make a larger number of purchases in the grocery stores, but the purchases are smaller and generally account for about 25 percent of the benefits.

Households with larger allotments tend to make more purchases, to shop in more stores, and to use more types of stores. Supermarkets predominate in both large and small allotment categories, however. As allotment amounts increase, households redeem a higher proportion of the allotment in supermarkets.

Chapter Five

INACTIVITY

INACTIVITY

Food Stamp recipients do not necessarily use the benefits they are issued each month. There are no requirements to do so. Prior to the EBT demonstration, food stamp recipients received monthly Authorization-to-Participate (ATP) cards which they exchanged for coupons at local bank branches. In the coupon system, some recipients may not receive their ATPs or may not exchange them for coupons. They may hold benefits indefinitely before redeeming them, as coupons have no expiration date. Coupons may be accidentally destroyed, lost, or simply forgotten and never used at all. Although presumably most recipients use their benefits, the coupon system affords no direct accounting.

Recipients in an EBT system also may be issued benefits that they never redeem or redeem only after a delay. This occurs in ways that differ somewhat from the coupon system. To understand how this occurs in the EBT system, it is useful to consider the various events that mark a household's participation, as illustrated in Exhibit 5-1.

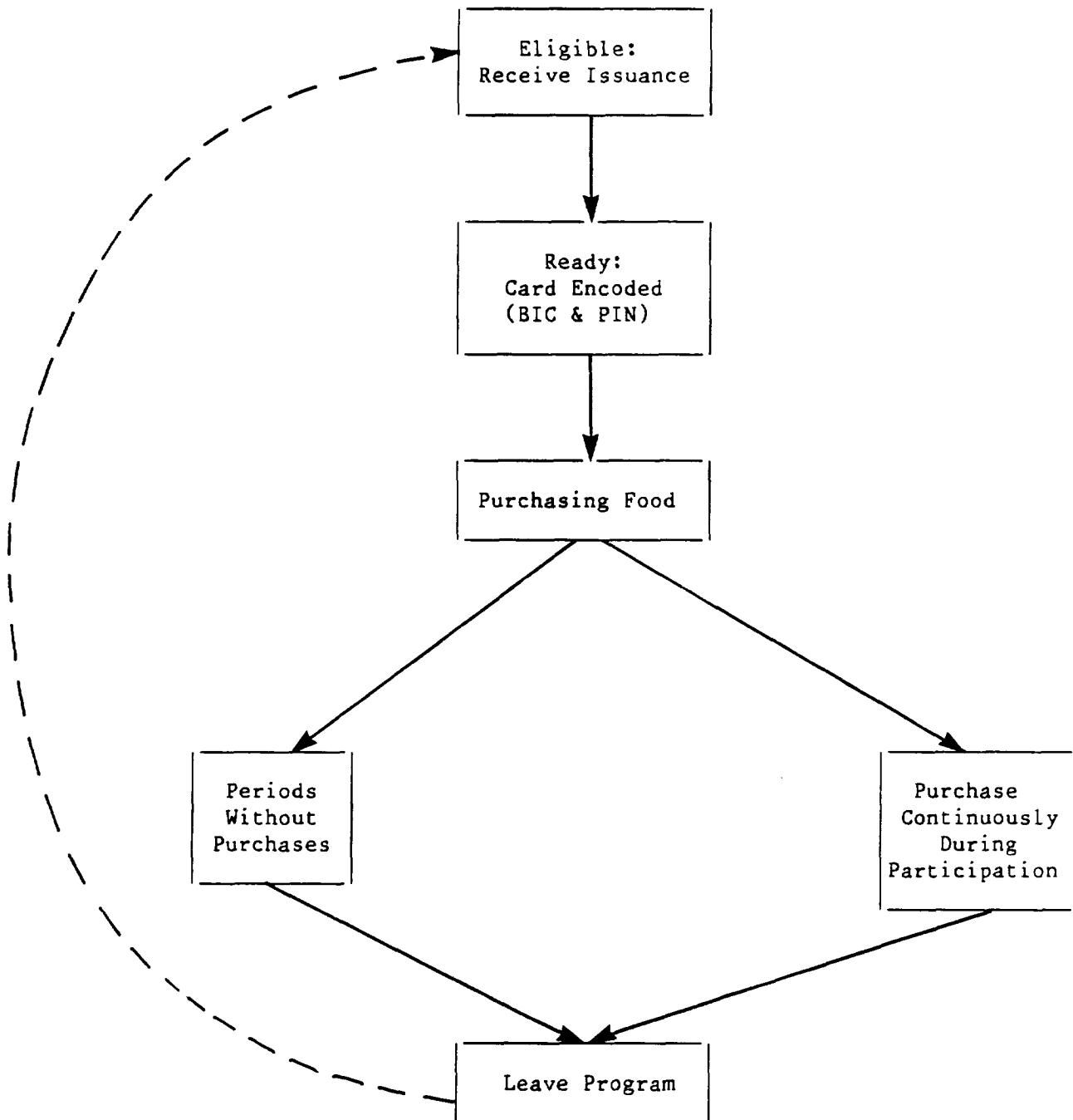
A household must apply and be certified eligible to receive benefits. In the EBT system, the initial allotment is issued (posted to the household's account) as soon as the household is found eligible. Recipients must next go to the welfare office to get their EBT card and be trained in its use. Although this normally occurs within a few days, some applicants wait ~~larger and some never appear. This is the first point at which a household's~~

account may be "inactive," that is, the account may contain benefits for a month or more with no redemption transactions.

Once households receive their EBT cards, they can begin using their benefits to purchase food. Most households do so immediately. Again, however, some recipients delay at this point and wait a month or more to begin

Exhibit 5-1

EBT System



cannot meet their food needs without assistance. Nonetheless, in any given month some households may be unable to spend their benefits, perhaps due to illness or being out of town. Other households may choose not to spend a particular month's benefits right away, but to save them for a time when they know expenses will be unusually high, such as the holiday season.

When recipients leave the Food Stamp Program because they are no longer eligible to receive benefits, they may have benefits remaining in their EBT account. They are entitled to spend these benefits whenever they choose. Some recipients wait a month or more before drawing down their accounts, and some never use all the benefits.

Data on the incidence of these four types of inactivity may be useful to EBT system designers from several perspectives. The degree to which recipients can be expected to delay beginning to use their benefits affects planning and system capacities. If some percent of the caseload does not purchase food each month, this will also affect the necessary system capacities, as well as affecting the interpretation of aggregate usage statistics. Finally, the Food Stamp Program currently has no way to tell when households that leave the program can be dropped from the computer system records. It would be inefficient for the system to carry many inactive accounts, but neither should recipients be denied access to their benefits. Data on how long it takes households to use all their benefits, and when it is realistic to assume they will never use them, will aid in planning how long to carry households after they are no longer eligible to receive benefits.

Information on the incidence of inactivity also may provide some perspective on the needs of food stamp recipients, and how well the program is meeting these needs. One indicator of lack of need might be failure to use the system. We cannot assume, however, that non-use implies lack of need. There are certainly other explanations. For example, recipients may not understand how to use the system or they may have been unable to shop because of illness. While the program is designed specifically to avoid most of these problems, the possibility of their existing for a small proportion of the households remains.

In any given month, the number of household accounts that are inactive is relatively small (Exhibit 5-2). Approximately 92 percent of all households receive benefits and purchase food. An additional 4 percent do not

Exhibit 5-2

Account Activity and Inactivity
February-November 1985

Status of Household	Case Months
Allotted Benefits	
Purchased Food	92.0%
Card Not Encoded	1.0
Shopping Not Begun	0.7
Non-Shopping Spell	2.0
No Allotment ^a	
Purchased Food	1.3
No Shopping Activity	2.9
Total	100.0%

^a A household has to have made at least one EBT purchase prior to discontinued benefits in order to be counted here as having left the Food Stamp Program.

receive benefits because they are no longer eligible, but some of these households make purchases out of the balance remaining from previous issuances. Few households, less than two percent, delay starting to use their benefits. The remaining two percent simply do not make any purchases during the month.

Of those who are allotted benefits, then, about 4 percent do not use their EBT cards to purchase food. This seems roughly comparable to the ATP/coupon system, where in an average month, over 3 percent of the ATP cards that are issued are not exchanged for coupons.¹ (Replacements for cards that are reported lost or stolen are excluded from the calculations.) These inactive households may not have received their card in the mail but never requested a replacement, or may have moved prior to receiving the card. Of course, some ATP cards may have been received but simply never cashed in at a local bank branch. Due to the different natures of the two methods of benefit redemption, the types of inactivity cannot be directly compared. The rest of the chapter explores in detail the periods of EBT card inactivity described above.

5.1 RECIPIENTS WHO RECEIVED AN ALLOTMENT BUT DID NOT IMMEDIATELY GET THEIR EBT CARDS

The number of households that delay getting their EBT cards or never get them was different in the startup phase of the EBT system (from October 1984 through January 1985) compared to the later operating period (February-December 1985). As a result, the discussion of these two periods is separate. The experiences during the latter period are indicative of recipient behavior that can be expected once an EBT system is operating smoothly. Different patterns can be expected during system startup.

Delays During Later Months of System Operations. Almost 15 percent of the households that began receiving benefits during the February-December period did not get their card encoded in the same month their first allotment was issued (Exhibit 5-3). The vast majority of these households had their card

¹Quarterly (Berks) County Summary Records, Quarters 1-3, 1984, compiled by the PDPW Division of Food Stamp Administrative Support. No data are available on the number of coupons households receive but never redeem.

Exhibit 5-3

**Number of Months Between First Issuance
and Getting EBT Card Encoded:
February-November 1985**

Number of Months Before Card Encoded	Number of Households	Percent	Percent Excluding 0
0	1,461	85.1%	--
1	223 ^a	13.0	87.1%
2	9	0.5	3.5
3	0	0	0
4	1	0.1	0.4
never encoded	23	1.3	9.0
Total	1,717 ^b	100.0%	100.0%

^aIf the household was issued benefits after the month's regularly occurring issuance, the delay may have been less than a month, i.e., a matter of days.

^bExcludes households that entered the Food Stamp Program during system start-up or the last month of the demonstration.

encoded the following month, and for many this was actually only a few days' delay. Food stamp benefits are regularly issued to households once a month. Households that apply for benefits after the regular issuance date receive a pro-rated issuance to cover the period until the next regular issuance. If a household receives a pro-rated issuance near the end of an allotment month, the next month's regular issuance may occur by the time it gets its EBT card. In fact, well over half the households shown with a one-month delay received a pro-rated issuance, indicating that they did not wait an entire month to get their card.

A small number of households, just over 1 percent of the accounts opened, never get their EBT cards. All these households receive only one or two issuances and then are no longer issued benefits. It seems likely that these households experience a sudden change in circumstances after applying for food stamps, and no longer need the assistance. Whatever the reason, it is clear that the households that never get their EBT cards have only a short-term attachment to the Food Stamp Program.

The monthly benefits of households that delay getting their cards accumulate in their accounts. Households that eventually get their cards accumulate an average of \$150 (Exhibit 5-4). Although these people delay getting their cards, they do use their benefits once they have the card. On average, they spend just over 74 percent of their accumulated benefits in their first month shopping. This proportion increases to over 92 percent when the households that never use their encoded cards are excluded.

The characteristics of the families that do not immediately get their EBT cards are not strikingly different from the EBT population as a whole. Those experiencing delays do, however, tend to be smaller households with correspondingly smaller allotments (Exhibit 5-5). About 70 percent of the households that delay getting their cards have only one or two members. About 60 percent receive issuances of \$100 or less. These figures are higher than the comparable figures for the overall food stamp population. More pronounced versions of the same pattern will be seen later in the examination of other types of inactivity.

Startup Period. There are some striking, though not surprising, differences between the households that received their first issuance during system start-up and those that entered the program in later months. Ninety-

Exhibit 5-4

Value of Benefits Accumulated and Spent
by Households That Waited at Least
One Month Before Getting EBT Card Encoded:
February-November 1985

Value of Benefits Accumulated During Wait (N=256 households) Mean (s.d.)	\$46,400.00 \$181.25 (127.03)
Value of Benefits Available to Spend When Encoded ^a (N=233) Mean (s.d.)	\$34,967.00 \$150.07 (134.29)
Proportion of Available Benefits Used During the First Month Card was Encoded ^b (N=233) Mean (s.d.)	 74.2% (40.4)

^aIn 48 cases, the PDPW removed benefits from household's account when several months passed after receiving their first allotment without getting their card encoded.

^bIf the 44 households that never made a purchases are excluded, the mean proportion of balance spent during the time they got their cards is 91.5 percent.

Exhibit 5-5

Characteristics of Households That Waited
At Least One Month Before Getting
EBT Card Encoded:
~~February~~ November 1985

Characteristic	Percent of Households (N=256)	Population Percent
Allotment Amount:		
\$50 or less	18.9%	20.5%
\$51 to \$100	44.1*	29.5*
\$101 to \$160	23.0*	24.3*
\$161 or more	14.0*	25.7*
Ethnicity:		
White	54.9%	49.7%
Black	12.5*	17.1*
Hispanic or Other	32.6	33.2
Public Assistance:		
Yes	49.2%*	51.9%*
No	50.8*	48.1*
Household Size:		
1	48.9%*	39.2%*
2	20.6	20.8
3 to 4	22.3*	28.6*
5 or more	8.2	11.4

Statistical significance: *, $p < 0.05$ for comparison of households that delayed getting EBT card and the demonstration population within characteristic classifications.

one percent of the training group got their cards encoded immediately and 1.5 percent waited one or two months (Appendix B, Exhibit B-5.1). Fewer than 2 percent delayed the process 2 months or longer. This is understable, given that these were mainly household already participating in the Food Stamp Program and training sessions were scheduled to facilitate uninterrupted use of benefits.

About 6 percent of the households never got their EBT cards encoded. At first glance, this number may seem quite high. It is likely, however, that most of these cases were about ready to close. Recipients who knew they were no longer eligible to receive benefits and those who knew they would soon be ineligible did not bother to get EBT cards. Other data support the conclusion that these cases are not indicative of a problem with the EBT system.¹ Caseload closure rates in Reading did not rise at the beginning of the demonstration, suggesting that the demonstration did not force households to leave the program. The recipient surveys also support the conclusion that the demonstration did not force households to leave the Food Stamp Program.

5.2 RECIPIENTS WHO HAVE EBT CARDS BUT WAIT SOME TIME BEFORE PURCHASING FOOD

Most households, almost 89 percent, begin using their benefits as soon as they get their EBT cards (Exhibit 5-6). The approximately 11 percent who do not purchase food immediately are split roughly equally into two categories: households that make their first purchase in the month after their card is encoded, and those that never make a purchase.

Almost all the households shown as waiting one month before making a purchase received a pro-rated first issuance. As discussed in the preceding section, this means these households waited less than a month before they began to shop, and may only have waited a few days. There does not appear to be any reason to be concerned about the ability of these households to participate in the EBT system. In the time before these households begin to purchase food, some benefits accumulate in their accounts. Once they begin making purchases, they spend their current monthly allotment as well as most

¹See William L. Hamilton, et. al., The Impact of an Electronic Benefit Transfer System in the Food Stamp Program, Cambridge, Massachusetts: Abt Associates Inc., January 1987.

Exhibit 5-6

Number of Months Between Getting Card
Encoded and First Purchase:
February-November 1985

Number of Months Before Making a Purchase	Number of Households with Encoded Card	Percent	Percent Excluding 0
0	1,504	88.8%	--
1	97 ^a	5.7	51.5%
2	5	0.3	2.6
3	0	0.0	0.0
4	1	0.1	0.5
never purchased	87	5.1	45.8
Total	1,694 ^b	100.0%	100.0%

^aIf the household was issued benefits after the month's regularly occurring issuance, the delay may have been less than a month, i.e., a matter of days.

^bExcludes those households that entered the Food Stamp Program during system start-up or the last month of the demonstration, or that never got their EBT card encoded.

of the accumulated benefits, as Exhibit 5-7 shows. These households that wait some time before purchasing food tend to be small households that receive lower-than-average levels of benefits (Exhibit 5-8).

Approximately 5 percent of the households that get their EBT cards never use them to make a purchase. There does not appear to be any relationship between households that never purchase and those that delay getting their cards encoded. Most of those that never make a purchase get their EBT cards within a month of receiving their first issuance. EBT records indicate that before December 31, 1985, most of these households' benefits were redeemed in an "ATP purchase", meaning the household exchanged its card for food stamp coupons. This procedure was normally used when households were moving to areas outside the EBT demonstration boundaries. Excluding these cases, only 1 percent of the households never use their card to redeem any benefits. These households seem to have a tenuous relationship to the Food Stamp Program, receiving three or fewer issuances and then leaving the program. These households tend to be small (80 percent had one or two members) and 80 percent of them receive \$100 or less in benefits.

5.3 SPELLS OF SHOPPING INACTIVITY

Food stamp benefits are regularly issued once a month to eligible households. Although the household is not required to redeem the allotment each month, almost 92 percent of the EBT households spend at least some of their allotment every month, as Exhibit 5-9 shows.

A spell of shopping inactivity is defined as a period of one or more months in which the household makes no purchases even though it receives food stamp benefits and has previously used the card at least once. Approximately eight percent of the households have one or more spells of shopping inactivity. Most have only one spell, and most spells last only one month (Appendix B, Exhibit B-5.3).

During the month or months in which households make no purchases, benefits accumulate in their EBT accounts. Households accumulate an average of \$54 in their accounts (Exhibit 5-10) during such inactivity spells. They are generally quick to spend this money when they resume purchasing. In the first month after the spell of shopping inactivity, households spend 80 percent of the total benefits available to them (accumulated balance plus current month's allotment).

Exhibit 5-7

Value of Benefits Accumulated and Spent
by Households That Waited at Least
One Month Before Making a Purchase:
February-November 1985

	Households	
	Eventually Purchased (N=103)	Never Purchased (N=87)
Value of Benefits Accumulated During Wait	\$11,232.00	\$6,642.00
Mean (s.d.)	\$109.05 (88.96)	\$76.34 (76.10)
Proportion of Avail- able Money Spent During First Month		
Mean (s.d.)	87.8% (18.6)	-----

Exhibit 5-8

Characteristics of Recipients Who Waited
At Least One Month Before Making a Purchase:
February-November 1985

Characteristic	Percent of Households		Population Percent
	Waited to Purchase (N=103)	Never Purchased (N=87)	
Allotment Amount:			
\$50 or less	28.4%	31.2% ^a	20.5% ^a
\$51 to \$100	31.4 ^b	48.1 ^b	29.5 ^b
\$101 to \$160	15.7 ^c	11.7 ^c	24.3 ^c
\$161 or more	24.5 ^b	9.1 ^b	25.7 ^b
Ethnicity:			
White	58.4%	55.4%	49.7%
Black	11.9	15.4	17.1
Hispanic or other	29.7	29.2	33.2
Public Assistance:			
Yes	55.3% ^b	33.3% ^b	51.9% ^b
No	44.7 ^b	66.7 ^b	48.1 ^b
Household Size:			
1	55.5% ^c	64.6% ^c	39.2% ^c
2	22.8	15.4	20.8
3 to 4	16.8 ^c	16.9 ^c	28.6 ^c
5 or more	4.9 ^c	3.1 ^c	11.4 ^c

^aDifference between households that never purchased food and the demonstration population significant at 0.05 level.

^bDifference between households that eventually purchased food and those that never did, and between households that eventually purchased food and the demonstration population significant at 0.05 level.

^cDifference between households that eventually purchased food and the demonstration population, and between households that never purchased food and the demonstration population significant at 0.05 level.

Exhibit 5-9

**Number of Spells of Shopping Inactivity
During Program Participation**

Number of Spells of Shopping Inactivity	Number of Households	Percent	Percent Excluding 0
0	4,749	91.8%	---
1	325	6.3	77.0%
2	60	1.2	14.2
3	26	0.5	6.2
4	9	0.2	2.1
5	2	< 0.1	0.5
Total	5,041 ^a	100.0%	100.0%

^aExcludes households that never got card encoded, never purchased food, or that entered the Food Stamp Program in December, 1985.

Exhibit 5-10

**Value of Benefits Accumulated and Spent
During Shopping Inactivity Spells**

	Number of Spells (N=569)
Value of Benefits Accumulated During Shopping Inactivity Mean (s.d.)	\$30,908.00 \$54.32 (75.88)
Proportion of Accumulated Benefits and Current Allotment Spent During First Month of Resumed Shopping Mean (s.d.)	 80.7% (25.1)

Source: Case-level records, N=5,041 households of which 422 had at least one spell of shopping inactivity (a total of 569 spells).

Several different factors may explain why households do not redeem their benefits every month. Some may be unable to, perhaps because they are ill or out of town. Recipients can convert their benefits to coupons if, for example, they move out of the demonstration area. The number of times a household can convert to coupons is limited (twice throughout the demonstration), however, and requires that the balance of all benefits be removed. It is possible that some of the shopping inactivity spells result from these limitations, i.e., that the funds are left dormant when it was inconvenient, if not impossible, to convert them to coupons. Other households may choose not to spend their benefits. In particular, households that receive a small monthly allotment may find it easier to save up their benefits for one large shopping trip.

The data lend some support to the latter hypothesis. Approximately 62 percent of the households that experience at least one spell of shopping inactivity receive \$50 or less in benefits, and an additional 24 percent receive \$51-\$100 (Exhibit 5-11). The households most often have only one member, and over 80 percent do not receive public assistance. It is likely that many of these recipients are elderly, though we have no direct test of this hypothesis.

5.4 HOUSEHOLDS THAT LEAVE THE FOOD STAMP PROGRAM

Each month, some households leave the Food Stamp Program and others enter. In Reading, the turnover rate is slightly over five percent per month. Thus, of the 5,000 households who used the EBT system, during the demonstration period, over one-third left the program at some time during the demonstration (Exhibit 5-12).

Most households left the program "permanently" (i.e., did not return prior to the December 1985 issuance), though a small number returned at some time during the demonstration.¹ These groups behave differently, and therefore the analysis examines them separately.

¹It is likely that some of the households classified as having "permanently" left the system may actually return. For example, a household that left in November 1985 may have returned in January 1986, after the demonstration ended.

Exhibit 5-11

**Characteristics of Households That Stopped
Purchasing Food for at Least One Month**

Characteristic	Percent of Households (N=422)	Population Percent
Allotment Amount: \$50 or less \$51 to \$100 \$101 to \$160 \$161 or more	62.3%* 23.7%* 8.1%* 5.9%*	20.5%* 29.5%* 24.3%* 25.7%*
Ethnicity: White Black Hispanic or Other	67.2%* 12.1%* 20.7%*	49.7%* 17.1%* 33.2%*
Public Assistance: Yes No	17.1%* 82.9%*	51.9%* 48.1%*
Household Size: 1 2 3 to 4 5 or more	73.4%* 11.6%* 11.4%* 3.6%*	39.2%* 20.8%* 28.6%* 11.4%*

Statistical significance: *, $p < 0.05$ for comparison of households that stopped shopping for at least one month and the demonstration population within characteristic classifications.

Exhibit 5-12

Number of Spells Out of the Food Stamp Program
October 1984-November 1985

Number of Spells	Number of Households	Percent	Percent Excluding 0
0	3,228	64.0%	-----
1	1,703	33.8	93.9%
2	104	2.1	5.7
3	6	0.1	0.3
Total	5,041 ^a	100.0%	100.0%

Source: Case-level records, N=5,041 households of which 1,813 experienced one or more spells out of the Food Stamp Program (total number of spells =1,929).

^aExcludes households that never got card encoded, never purchased food, or that entered the Food Stamp Program in December, 1985.

This analysis focuses on recipients' behavior after they leave the Food Stamp Program. The first question is whether they spend all their benefits before they leave. Even after they become ineligible for further benefits, households are entitled to spend all the benefits they previously received. The second issue therefore concerns whether households spend their remaining benefits and how long it takes them to do so. Answers to these questions will help planners determine how long households' accounts should remain open on the EBT system after the household has formally stopped participating in the program.

Balance When Leaving Program. Households leave the Food Stamp Program with an average of about \$30 remaining in their accounts (Exhibit 5-13). Only about one-third of the households spend all their benefits before leaving the program, but about 60 percent of the households virtually exhaust their benefits (meaning they have no more than \$1 or 1 percent of their allotment remaining when they leave). This figure is considerably less than the 87 percent of the overall food stamp population who virtually exhaust their benefits each month, as discussed in Chapter 3 (Exhibit 3-3). It is unclear whether the households that leave the program with unspent benefits do so intentionally.

It appears that some households do not know they have benefits in their accounts. Of those who leave with more than \$1 or 1 percent of their benefits, 36 percent do not spend any of their last month's allotment. It seems likely that these households are unaware of the last issuance.

Households that leave the program and return at a later date have somewhat more unspent benefits than those who leave permanently. On average, households that eventually return to the program leave with \$37, and 14 percent of them have over \$100. In contrast, households that leave permanently have \$26 remaining and only 9 percent have more than \$100. Perhaps some of the households that return to the program know they will become ineligible for a few months and save some benefits to tide them over.

Redemptions after Leaving Program. Some households do spend their remaining benefits after they leave the program, though many do not, as Exhibit 5-14 shows. Again, households that leave the program permanently behave differently from those who return. Most of those who leave permanently and have a remaining balance spend none of it. In contrast, among those who leave with a positive balance and eventually return to the program, two-thirds

Exhibit 5-13

**Balance Prior to Beginning of Spell
Out of the Food Stamp Program**

Balance	Percent of Spells	
	Temporary Spell (N=435)	Spell Ends With Demonstration (N=1,494)
\$0	36.1%	37.3%
0.01-1.00	21.8	23.7
1.01-10.00	12.2	15.0
10.01-50.00	7.1	7.4
50.01-100.00	8.7	7.6
over \$100.00	14.0	8.9
mean balance (s.d.)	\$37.33 (78.17)	\$25.89 (63.60)

Source: Case-level records, N=5,041 households of which 1,813 experienced one or more spells out of the Food Stamp Program (total number of spells =1,929).

Exhibit 5-14

Spending During Spells Out of the Food Stamp Program

Balance Prior to Spell	Percent of Spells	
	Temporary Spell (N=435)	Spell Ends With Demonstration (N=1,494)
Virtually Exhausted (Not more than \$1 or 1% of allotment)	59.3%	61.4%
More than \$1 and 1% of allotment:		
Spent no money	10.1	24.0
Spent virtually all	23.4	11.4
Spent some, not all	7.1	3.1
Total	100.0%	100.0%

Source: Case-level records, N=5,041 households of which 1,813 experienced one or more spells out of the Food Stamp Program (total number of spells =1,929).

spend at least some of their benefits during the months they receive no issuance.

It is unclear why households that permanently leave the program behave differently from those who only temporarily leave. Perhaps those who return have a longer term connection to the Food Stamp Program and, because of their longer association, know they are entitled to spend their remaining benefits. It is also possible that some of those who leave the program permanently are prevented from redeeming benefits by the same factor that ends their participation (e.g., a sudden move out of state, institutionalization, death).

Nonetheless, by the end of the demonstration, or the end of the spell for those who return to the program, the vast majority of recipients have practically no remaining benefits (Exhibit 5-15). Approximately three-quarters have less than \$1 remaining. However, about five percent of the households have over \$100 in unspent benefits. It seems likely that these households do not know they are entitled to spend their remaining benefits.

Households that temporarily leave the Food Stamp Program begin their spells out of the program with a larger balance of benefits than do households that leave permanently. However, those who leave temporarily are also more likely than other households to spend some of their unused benefits. As a result, by the end of their spell out of the program, those who leave temporarily have less unspent benefits than do those who have left the program permanently.

Timing of Spending. Households that redeem any of their remaining benefits generally do so within five months of leaving the program, and most redemptions occur in the first month (Exhibit 5-16). This is true whether the household temporarily or permanently leaves the program, though the latter households tend to spread their purchases out longer. Given this pattern, it would be reasonable to drop recipients from the computer system six months after they leave the program. If the welfare office keeps a list of those who still have funds remaining, they can then give the household their remaining benefits in food stamp coupons in the rare instances when the household decides to claim the benefits.

Exhibit 5-15

Balance at End of Spell

Balance	Spells Ending When Household Returned to Food Stamp Program (N=435)	Spells Ending With Demonstration (N=1,494)
\$0	50.1%	45.4%
0.01-1.00	31.0	26.1
1.01-10.00	7.4	11.0
10.01-50.00	3.2	5.0
50.01-100.00	4.6	6.4
over \$100.00	3.7	6.1
	Total = 100.0%	Total = 100.0%
Mean Balance (s.d.)	\$10.42 (34.75)	\$18.70 (54.70)

Source: Case-level records, N=5,041 households of which 1,813 experienced one or more spells out of the Food Stamp Program (total number of spells =1,929).

After Leaving Food Stamp Program

Month of Spell	Spells Ending When Household Returned to Food Stamp Program (N=435)		Spells Ending With Demonstration (N=1494)	
	Value	Percent	Value	Percent ^b
First	\$11,363.57	70.0%	\$9,059.49	23.4% (23.4%)
Second	247.86	1.5	1,180.48	3.1 (3.8)
Third	69.72	0.4	229.54	0.6 (0.8)
Fourth	0.0	0.0	545.75	1.4 (2.4)
Fifth	0.0	0.0	254.65	0.7 (1.3)
Sixth	0.0	0.0	15.14	<0.1 (0.1)
Seventh	22.55	0.1	31.26	0.1 (0.2)
Eighth	2.90	<0.1	0.0	0.0 (0.0)
Never Spent:	4,534.13 ^a	27.9	27,367.12	70.7 -
Total	\$16,240.73	100.0%	\$38,683.43	100.0% -

^a Represents benefits not spent before returning to program.

^b The figures in parentheses are adjusted to account for the fact that for some households, the end of the demonstration truncated the observations, which may bias the observed spending patterns. To compensate for this, rather than divide the spending during each month of a spell by the sum of all households' beginning balances, we included only the balances of those households for which the observation was not truncated. For example,

$$1.3\% = \frac{\$254.65}{\$19,077.03}$$
 where \$19,077.03 = the sum of the balances of the households that left the Food Stamp Program for 5 or more months. The adjusted figure shows that the raw figures are not substantially biased by truncation.

Differences by Household Characteristics. Households that leave the program with some unredeemed benefits (at least \$1 or 1 percent of their allotment) are somewhat different from those that virtually exhaust their benefits before formally ending their participation. The households with positive remaining balances tend to be smaller and have smaller allotments than those virtually exhausting their benefits (Exhibit 5-17).

Among those who leave with unredeemed benefits, a similar distinction exists between households that ultimately spend some or all of their remaining benefits and those who spend none. Those who cease redemption activity entirely have the smallest average allotments and households.

None of these patterns provides much insight into why some households exhaust all of their benefits before leaving the program, some redeem benefits subsequently, and some never redeem any of the benefits in their account when they leave the program. As in the other areas of inactivity, the data tend to suggest that those with relatively less dependence on the benefits (that is, those with small benefit amounts and presumably proportionately larger sources of other income) are the most likely to leave some benefits unused. The specific reasons for these patterns can not be inferred from the available data, however.

5.5 SUMMARY

Most households using the EBT system do not experience any periods of delay or inactivity. Excluding the 1-month delays (the majority were the results of pro-rated issuances), the rates of any of the four types of inactivity are well under 10 percent.

Only 1 percent of the households never get their EBT card encoded. Similarly, 5 percent of those with cards never use them to purchase food. Of those who get cards and begin using the system, about 8 percent experience a period of shopping inactivity, usually of only 1 month's duration. In all of these cases, the households spend, on average, at least 74 percent of the benefits that accumulate during the periods of delay or shopping inactivity.

Most of the households that leave the Food Stamp Program do not return (at least within the period available for observation) during the demonstration. Those that do return, however, leave with larger balances,

Exhibit 5-17

Household Characteristics Associated with Spells
Off the Food Stamp Program

Characteristic	Percent of Spells			Population Percent
	Virtually Exhausted Before Leaving (N=1198)	Redeemed Some or All After Leaving (N=331)	No Redemption After Leaving (N=400)	
Allotment Amount:				
\$50 or less	19.3%	19.7%	21.5%	20.5%
\$51-\$100	37.9 ^a	41.3	48.3 ^a	29.5
\$101-\$160	21.4 ^a	17.7	15.3 ^a	24.3
\$161 or more	21.5 ^b	21.2 ^b	15.0 ^b	25.7
Ethnicity:				
White	45.2%*	62.6%*	53.8%*	49.7%
Black	17.9	14.5	14.6	17.1
Hispanic or Other	36.9*	22.9*	31.6*	33.2
Public Assistance:				
Yes	47.2% ^c	38.7% ^c	45.0%	51.9%
No	52.8 ^c	61.3 ^c	55.0	48.1
Household Size:				
1	36.0% ^b	40.3% ^b	53.3% ^b	39.2%
2	18.9	22.3	17.8	20.8
3-4	33.2 ^b	28.6 ^b	20.4 ^b	28.6
5 or more	11.9 ^a	8.8	8.6 ^a	11.4

^aDifference between households that virtually exhausted their balance before leaving and those that did not redeem available benefits after leaving the program significant at 0.05 level.

^bDifference between households that redeemed some or all of their benefits and those that redeemed none and between households that virtually exhausted their benefits and those that redeemed none.

^cDifference between households that virtually exhausted their balance before leaving and those that redeemed some or all of their benefits significant at 0.05 level.

Statistical significance: *, $p < 0.05$ for comparison of groups with characteristic classifications.

suggesting that they may store some benefits for use while they are not receiving new allotments. About 60 percent of the households virtually exhaust their benefits prior to leaving the program, whereas 87 percent of the overall food stamp population does so each month. Many, though not all households, redeem some of their unused benefits after they leave the program, usually in the first month.

Households that experience some type of inactivity tend to be small and receive lower-than-average levels of benefits. This is especially true of those that leave the Food Stamp Program with a positive balance, and even more so for the households that never redeem their unused benefits.

APPENDIX A
DETAILS OF DATA SOURCES AND MANIPULATION

A.1 ALLOTMENT MONTH DEFINITION

In order to study patterns of recipient benefit spending relative to the time of issuance, we defined allotment months as beginning on the date and hour that regularly occurring benefits were issued. To relieve peak demands on the EBT system, after June 1985, the households were divided into 2 groups who received their benefits approximately one week apart. During the demonstration period the 15 allotment months ranged in length from 26 days to 34 days for the early recipients with a mean of 30.7 days. For those in the late-issuance group, the whole months ranged from 26 days to 39 days with a mean of 31.5 days (Exhibit A-1). This relatively long month is due to the extra week delay during the month that the households were divided.

If an allotment month began at a time other than midnight, we effectively lengthened or compressed the adjacent day so that all purchases prior to the issuance occurred during the previous allotment month. An example is shown below.

		Hour of Issuance			
		6 pm			
DATE	Calendar	June 1	June 2	June 3	June 4
	Allotment	Month 8 (May) Day 28	Month 8 (May) Day 29	Month 9 (June) Day 1	Month 9 (June) Day 2

Exhibit A-1

Allotment Month Definition and Length

<u>Date of Issuance</u>		<u>Number of Days in Allotment Month</u>	<u>Allotment Month</u>
10-1-84		30	October 1984
10-31-84		32	November 1984
12-2-84		30	December 1984
1-1-85		34	January 1985
2-4-85		30	February 1985
3-6-85		26	March 1985
4-1-85		34	April 1985
5-4-85		29	May 1985
6-2-85		32,39	June 1985
<u>Early</u>	<u>Late</u>		
7-5-85	7-12-85	32,32	July 1985
8-6-85	8-13-85	31,32	August 1985
9-6-85	9-12-85	28,29	September 1985
10-4-85	10-10-85	34,36	October 1985
11-7-85	11-14-85	28,28	November 1985
12-5-85	12-11-85	27,20	December 1985

A.2 TRANSACTION FILE EDITS

CREDIT RESOLUTION

When a recipient purchases food using an EBT card, the cashier is able to credit the household's account. If, for example, the cashier accidentally charges \$50 for a \$5 item, s/he can either credit the account \$45, or assign a credit of \$50 and make a new charge of \$5 on the account.

In order to clean and compress the transaction file, we eliminated the credit transactions via an algorithm that deleted:

- both the purchase and subsequent credit transactions when of equal value and in the same store; and
- credits in amounts smaller than a prior purchase after adjusting the prior purchase by subtracting the amount of the credit (e.g., a \$5 purchase followed at the same store by a \$1 credit was recorded as a single \$4 purchase).

The frequent multiple purchase-credit patterns may be due to the tendency of the EBT terminal plug to become loose, leading the cashier to think the transactions were not being processed when, in fact, only the display is not functioning.

Small errors on the part of the cashier, or merchandise returns are resolved by the adjusted-purchase approach. These three scenarios covered over 99% of the 2478 credits. We individually investigated and resolved the remaining few (n=26), none of which involved large errors. In most cases, the credit transaction preceded a debit of equal value.

NEGATIVE BALANCES

Out of 5,541 households using the EBT system, 146 (2.6%) showed a negative balance in the transaction file at some time during the demonstration period. According to their balances in the End-of-Month Reports, however, there were sufficient funds in these accounts.

Investigation of the households' transaction histories revealed that at times a single purchase was recorded twice on the archive tape, but the duplicate record did not affect the household's account balance at the EBT center. We deleted these repeated debits from the file. It is possible that

other such transmission errors went undetected, if the account balances never came close enough to zero so that our files would show a negative balance. However, very few recipients never exhausted their benefits, and benefit exhaustion in such a case would generate a negative balance in our records. Thus, the possibility of a significant number of undetected errors is remote.

ISSUANCE ERRORS

Twice during the demonstration period, faulty issuance transmissions occurred.

On May 7, 1985, while the system was processing a Supplemental Update containing 31 client records, the queue got out of sequence. Consequently, 6 clients were issued the wrong amounts. Two under- and four over-issuances occurred. Two of the clients spent their over-issuance and did not have enough benefits to cover the overage. The spent benefits were never recovered. The remaining four accounts were properly adjusted, i.e., all the unspent extra funds were removed from the accounts.

On September 16, 1985, the issuances for September 11 were accidentally retransmitted, thus doubling the issuances in 29 accounts. Upon detection of the error, all unspent funds were removed from the accounts. However, 5 recipients spent all and 5 spent part of the extra benefits before their accounts could be adjusted. As much of the extra issuance as could be was removed (without creating a negative balance).

A.3 RECIPIENT SURVEYS¹

ACTIVE CASE SURVEY

For use in characterizing recipients, we used interview data collected from individuals who received food stamp benefits during the demonstration.

Data included in this report use the head of household's:

- employment status;
- age;
- sex;
- handicap status; and
- years of formal education,

while recording for the household:

- who does the food shopping;
- how often the EBT card is used; and
- whether or not the recipients speak English.

The research used a pre-test/post-test design. The design can be characterized as follows:

	Baseline Measure (Aug.-Sept. 1984)	Introduction of EBT System (Oct. 1984)	Demonstration Period Measures (Feb.-March 1985)	(Aug.-Sept. 1985)
Demonstration group	0 ₁	X	0 ₂	0 ₃

One wave of interviews was conducted prior to the introduction of the EBT system (0₁) and two waves during the demonstration (0₂ and 0₃). The Wave 1 interviews provided baseline measures of the variables of interest, such as the problems recipients experienced and their costs of participating in the

¹This appendix is taken in large part from AAI's, "The Impact of an Electronic Benefit Transfer System in the Food Stamp Program," Susan H. Bartlett, January 14, 1987, Appendix VI-A.

program under the coupon system. Waves 2 and 3 provided comparable measures of what happened under the EBT system. During all 3 waves, recipients responded to questions about their age, employment and handicap status, but we used only the responses made during the demonstration (Waves 2 & 3) in our analysis.

The sample of EBT system participants was a random sample of all households living in the demonstration area who received food stamps in the month the survey began. The Wave 2 and 3 samples included all respondents interviewed in the previous survey (who could be found). To make the samples represent the full caseload at the time of the survey, the samples also included households who received food stamps during the previous interview wave but who were not included in the sample, and households who had recently begun receiving food stamps.

Exhibit A-2 shows the sample sizes and response rates for all three survey waves. The rate increased from 65% in Wave 1 to 79% in Wave 2 and 85% in Wave 3 because many of those interviewed had been interviewed in the previous survey, and response rates were higher for those previously contacted.

Data from PDPW allowed tests for non-response bias for a limited set of demographic and program characteristics. Response rates did not vary by racial/ethnic group or by whether the household received public assistance. Larger households did tend to have slightly higher response rates than smaller households, but this did not significantly change the overall composition of the sample (Exhibit A-3).

PARTICIPATION RECORDS

The Pennsylvania Department of Public Welfare provided data on all households that received food stamp benefits in Berks County during the months between March 1984 and January 1986. Each month the analysts at AAI received a "snapshot" of the continuously-updated file kept on each recipient who received a regular issuance. The data used in the analysis of shopping patterns were the number of people in each household, their ethnicity, and public assistance status. The data also indicated whether or not the recipients were in the EBT demonstration group. There were an average of 3,500 food stamp recipients in the demonstration group at any time during the demonstration.

Exhibit A-2

**Sample Sizes and Response Rates:
Active Case Surveys**

	<u>Number Surveyed</u>	<u>Response Rate^a</u>
Wave 1: Demonstration Group	286	65%
Wave 2: Demonstration Group	279	79%
Wave 3: Demonstration Group	286	85%

^aNumber surveyed divided by total sample drawn.

Source: Wave 1, 2, and 3 active case surveys.

Exhibit A-3
Demographic Characteristics of Wave 1 Respondents

	Demonstration Group (N=286)
<u>Race</u>	
White	53.8%
Black	18.5
Hispanic and other	27.6
<u>Language</u>	
English	73.8
Other	26.2
<u>Public Assistance</u>	
Received PA	50.3
Did Not Receive PA	49.7
<u>Age</u>	
Less than 40	56.7
40-59	22.7
60 or more	20.6
<u>Education</u>	
Less than 9 years	32.4
9-12 years	60.1
13 or more years	7.2
<u>Household Size</u>	
1-2	48.6
3-4	32.5
5 or more	18.7
<u>Sex</u>	
Female	84.3
Male	15.7

Source: Wave 1 active case survey

A.4 STORE DATA¹

When the EBT system began operating on October 1, 1984, 102 retailers were authorized and equipped to participate. By the end of December 1985, 162 retailers had had EBT equipment installed in their stores. Each store belonged to one of 25 categories normally applied in FNS monitoring systems. Exhibit A-4 shows the distribution of these stores.

The distribution of types of stores in the demonstration roughly parallels the distribution for the nation as a whole. Supermarkets, which account for about three-quarters of all food stamp redemptions nationwide make up about 15 percent of the participating establishments in Reading and in the nation. The most striking aspect of the Reading pattern is the high proportion of specialty food stores. This results in part from a substantial number of "farmers' markets" in Reading, with many small establishments selling meat, seafood, fruit, or produce. Many other stores in the specialty food category actually stock a full range of grocery items, but have names like "DeCarlo's Meat Market."

For this analysis, stores are classified into four major categories: supermarkets, small- to medium-groceries, convenience stores, and all others. Although the supermarket category includes only those stores with that FNS designation (SM), the small-to medium-grocery store category is defined to contain grocery stores (GS) and specialty food stores (SF). Similarly, convenience stores (CS) and combination grocery/gas stores (CG) make up the convenience store category. Combining these categories sacrifices little precision. Specialty stores are usually indistinguishable from grocery stores in Reading, often with no more than a nominal specialization in meat, seafood, or poultry. Convenience stores and combination grocery/gas stores differ only in the availability of gasoline, a distinction that has no significance here. The average monthly EBT sales and the proportion of food stamp money spent in each store type are shown in Exhibit A-5.

Although the total number of retail grocers in Reading is relatively stable, some stores went out of business during the course of the demonstra-

¹This appendix is taken in large part from Christopher D. Kane, Appendix V-A to, The Impact of an Electronic Benefit Transfer System in the Food Stamp Program.

Exhibit A-4

Store Distribution by FNS Code

FNS Code Name	Number of Stores in Demonstration	Percentage of Stores in Demonstration	Percentage of Stores Nationwide
Small/Medium Grocery (GS)	45	27.8%	28.8%
Specialty Food (SF)	42	25.9	9.0
Supermarket (SM)	24	14.8	15.5
Convenience (CS)	15	9.3	21.6
Other Combination (CO)	14	8.6	1.4
Combination Grocery/Gas (CG)	9	5.6	10.2
Produce Stand (PS)	5	3.1	2.7
Other Firm (OF)	3	1.9	0.1
Health/Natural Food (HF)	2	1.2	1.2
Combination Grocery/Deli (CD)	1	0.6	0.4
Comb. Grocery/Merchandise (CM)	1	0.6	2.4
Milk Route (MR)	1	0.6	0.7
Other	<u>0</u>	<u>0.0</u>	<u>6.0</u>
	162	100.0%	100.0%

Source: PRC Retail Inventory File

Exhibit A-5

Store Distribution by Four Categories

<u>FNS Code Name</u>	<u>Percent of Stores in the Demo</u>	<u>Percent of Benefits Redeemed</u>
Supermarket	SM - 14.8%	72.9%
Small/Med Grocery]	GS - 53.7	19.1
Specialty Food]		
Convenience]	CS - 14.9	5.3
Combination Grocery/Gas]		
Combination Grocery/Deli]	Other - 16.6	2.7
Comb. Grocery/Merchandise]		
Other Combinations]		
Produce Stand]		
Health Food		
Milk Route		
Other Firm		
	<u>100.0%</u>	<u>100.0%</u>

Exhibit A-6

Distribution of Number of EBT Transactions Made
Each Month Per Store by Store Type: Central Reading^a

Number of Purchases	Store Type			
	Supermarket	Grocery	Convenience	Other
0	0.0%	1.0%	0.0%	0.0%
1-50	1.6	41.9	19.4	42.6
51-100	0.0	12.6	6.7	17.6
101-500	18.0	35.8	49.3	39.2
501 or more	<u>80.3</u>	<u>8.8</u>	<u>24.6</u>	<u>0.6</u>
Total	100.0%	100.0%	100.0%	100.0%
Mean	1,467.1	191.8	332.9	113.1
(s.d.)	(1,123.0)	(234.7)	(282.3)	(115.2)
Minimum	34	0	1	1
Maximum	3,596	1,160	1,042	510
Number of Store-Months	61	525	134	176

Source: Transaction file (N=254,692 purchases in central Reading) sorted by store and month.

^aIncludes all months each store participated in the demonstration between February and November 1985. Central Reading is defined as Zipcodes 19601, 19602, 19603, and 19604.

tion, and new stores opened. Thus, of the 162 retailers that participated in the demonstration, not all of these stores were on the system at the same time. In an average month, 125 retailers conducted EBT transactions.

Retailers located in the central four ZIP Codes of Reading constitute approximately 60 percent of the evaluation sample. The remaining 40 percent of retailers are located outside the central area, but within a five-mile radius of downtown Reading.

APPENDIX B
SUPPORTING EXHIBITS

Exhibit B-2.1

Number of Shopping Trips Per Month: Actual vs. Reported

	Reported in Recipient Surveys		Actual from EBT Transaction Data		
Shopping Trips Per Month	Early Demon- stration (N=282)	Late Demon- stration (N=279)	Number of Purchases per Month (N=31,216)	Number of Days With 1 or more Purchases (N=31,216)	Number of Days With 1 or More Pur- chases & Spending More Than \$5 (N=30,832)
1 (Once a month)	35.8%	43.5%	14.0%	17.4%	25.5%
2-3 (Every other week)	29.0	29.8	18.9	22.5	30.8
4-8 (Once a week)	20.8	16.1	30.8	36.8	36.7
9-14 (More than once a week; not every day)	11.8	8.1	19.7	18.2	6.4
15-20 (Every day)	2.2	2.1	9.2	4.2	0.6
21+ (More than once a day)	<u>0.4</u>	<u>0.4</u>	<u>7.4</u>	<u>1.0</u>	<u>0.1</u>
	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Case-month records, N=31,216.

Exhibit B-2.2

**Mean Number of Purchases, During Weeks After Issuance,
by Allotment Amount**

Week of Allotment Month	\$50 or less (N=6,568)	\$51 to \$100 (N=8,830)	\$101 to \$160 (N=7,664)	\$161 or more (N=8,154)
1	1.4 (1.7)	3.6 (3.4)	4.6 (3.7)	6.6 (5.0)
2	0.7 (1.1)	1.8 (2.5)	2.5 (2.9)	3.9 (4.0)
3	0.4 (0.8)	0.9 (1.8)	1.2 (2.0)	1.9 (2.8)
4	0.2 (0.7)	0.7 (1.7)	0.7 (1.7)	1.0 (2.3)
Total for Month	2.7 (2.6)	7.0 (6.3)	9.0 (6.8)	13.5 (9.5)

Source: Case-month records, N=31,216.

Exhibit B-2.3

Number of Purchases Per Month Broken Down
by Allotment Amount and Household Characteristics

Household Characteristic	Allotment Amount				
	\$50 or less	\$51 to \$100	\$101 to \$160	\$161 or more	Total
Race					
White: mean	2.6 ^a	7.1*	9.1*	14.7*	7.6*
(s.d.)	(2.4)	(6.4)	(6.6)	(10.0)	(7.8)
N	4437	4298	3385	3087	15207
Black: mean	3.0 ^a	7.9*	10.6*	17.0*	9.4*
(s.d.)	(2.8)	(6.4)	(7.5)	(11.0)	(8.6)
N	998	2143	1407	1056	5604
Hispanic or other: mean	2.8 ^a	6.2*	8.0*	11.6*	8.4*
(s.d.)	(3.1)	(6.2)	(6.6)	(8.0)	(7.4)
N	1133	2383	2870	4005	10391
Public Assistance					
Yes: mean	3.4*	7.4*	9.4*	13.3*	10.3*
(s.d.)	(2.5)	(7.1)	(6.9)	(9.5)	(8.3)
N	84	5196	5400	6048	16728
No: mean	2.6*	5.8*	7.9*	13.9*	5.9*
(s.d.)	(2.6)	(4.9)	(6.3)	(9.4)	(6.6)
N	6484	3634	2264	2106	14488
Household size					
1: mean	2.6 ^b	7.7 ^b	12.6 ^b	9.9 ^b	5.3
(s.d.)	(2.7)	(7.0)	(8.8)	(8.4)	(6.0)
N	4989	5664	34	7	10694
2: mean	2.6 ^b	6.2 ^b	9.0 ^b	13.3 ^b	7.1
(s.d.)	(2.2)	(4.8)	(6.6)	(7.8)	(6.0)
N	1009	1995	3133	60	6197
3-4: mean	3.5 ^b	5.3 ^b	9.2 ^b	12.4 ^b	10.1*
(s.d.)	(2.5)	(4.6)	(7.1)	(8.4)	(7.9)
N	481	922	3793	4881	10077
5 or more: mean	3.7 ^b	4.8 ^b	7.9 ^b	15.1 ^b	13.1*
(s.d.)	(2.9)	(5.3)	(6.0)	(10.7)	(10.3)
N	89	249	704	3206	4248
Language					
English: mean	2.8	7.7	8.8	14.5*	8.6
(s.d.)	(2.8)	(7.4)	(6.4)	(9.9)	(8.2)
N	546	487	661	588	2282
Other: mean	2.3	7.7	9.1	10.6*	8.3
(s.d.)	(3.7)	(11.1)	(6.2)	(7.9)	(8.5)
N	145	233	205	363	946
Age					
Less than 30: mean	2.5 ^c	8.5 ^c	9.0	13.4	10.2*
(s.d.)	(2.1)	(9.2)	(6.0)	(9.4)	(8.3)
N	29	211	456	339	1035
30-49: mean	3.8 ^c	6.3 ^c	8.4*	12.5*	9.2*
(s.d.)	(5.2)	(5.9)	(6.1)	(9.2)	(8.1)
N	141	267	353	553	1314
50 or more: mean	2.4 ^c	8.5 ^c	11.3*	15.4*	5.5*
(s.d.)	(2.1)	(10.5)	(9.3)	(9.8)	(7.9)
N	513	242	57	59	871

Exhibit B-2.3
(continued)

Number of Purchases Per Month Broken Down
by Allotment Amount and Household Characteristics

Household Characteristic	Allotment Amount				
	\$50 or less	\$51 to \$100	\$101 to \$160	\$161 or more	Total
Education					
Less than 9 years:					
mean	2.6	6.2*	6.9*	11.1*	6.4*
(s.d.)	(3.4)	(5.6)	(4.5)	(8.4)	(6.6)
N	292	250	151	238	931
9 or more years:					
mean	2.6	8.5*	9.3*	13.7*	9.4*
(s.d.)	(2.8)	(9.9)	(6.6)	(11.3)	(8.8)
N	379	470	715	713	2277
Handicapped					
Yes:					
mean	2.7	7.4	10.0	14.7	6.4*
(s.d.)	(3.1)	(11.5)	(6.9)	(11.3)	(8.9)
N	332	193	87	85	697
No:					
mean	2.7	7.8	8.8	12.8	9.1*
(s.d.)	(3.0)	(7.5)	(6.3)	(9.1)	(8.0)
N	359	527	779	866	2531
Employed					
Yes:					
mean	4.1*	11.4*	9.8*	10.8*	10.0*
(s.d.)	(4.2)	(11.9)	(6.1)	(6.5)	(8.1)
N	37	99	140	148	424
No:					
mean	2.6*	7.1*	8.7*	13.5*	8.3*
(s.d.)	(2.9)	(7.9)	(6.4)	(9.8)	(8.3)
N	654	621	726	793	2794
Who Does Shopping					
Self only:					
mean	2.6	8.0 ^d	8.8	12.2*	8.1 ^c
(s.d.)	(3.0)	(9.2)	(6.5)	(8.4)	(8.0)
N	550	619	675	648	2492
Self and children:					
mean	3.5	4.4 ^d	8.7	15.5*	11.6 ^c
(s.d.)	(4.0)	(4.1)	(4.9)	(11.7)	(10.1)
N	22	31	102	177	332
Self and/or other adults:					
mean	2.7	6.0 ^d	9.6	13.6	8.2 ^c
(s.d.)	(2.8)	(4.5)	(6.4)	(9.9)	(8.1)
N	119	70	89	126	404
Sex					
Male:					
mean	4.2*	10.6*	10.6*	14.1	9.4*
(s.d.)	(4.9)	(12.0)	(6.1)	(10.6)	(10.1)
N	147	185	60	96	488
Female:					
mean	2.3*	6.7*	8.8*	12.9	8.4*
(s.d.)	(2.1)	(7.0)	(6.4)	(9.2)	(7.9)
N	544	535	806	855	2740

Source: Case-month records merged with recipient data when available, N = 31,216

^aDifference between white and black and between white and other significant at 0.05 level.

^bAll comparisons within allotment categories significant except: \$50 or less, vs. 3-4 vs. 5+; \$51-100, 3-4 vs. 5+; \$101-160, 2 vs. 3-4.

^cDifference between less than 30 and 30-49 and between 30-49 and 50+ significant at 0.05 level.

^dDifference between self only and self and children and between self only and self and/or adult significant at 0.05 level.

^eDifference between self only and self and children and between self and children and self and/or adults significant at 0.05 level.

Statistical significance: *, p < 0.05 for comparisons of groups with different characteristics, within allotment categories.

Exhibit B-3.1

Number of Months Households Do Not Virtually Exhaust
Their Benefits by Household Characteristics

Household Characteristic	Always Virtually Exhausted Benefits	Did Not Virtually Exhaust Benefits in:	
		1-2 months	3 or more months
<u>Allotment Amount</u>			
\$50 or less	53.9%	36.8%	9.3%
\$51-100	50.0	38.1	11.9
\$101-160	54.1	32.6	13.1
\$161 or more	63.2	29.4	7.4
<u>Race</u>			
White	50.8	34.8	14.4
Black	55.8	36.6	7.6
Hispanic or other	59.2	32.8	7.9
<u>Received Public Assistance</u>			
Yes	56.5	33.1	10.4
No	52.2	36.0	11.7
<u>Number in Household</u>			
1	50.2	37.5	12.2
2	50.8	35.5	13.7
3-4	58.0	32.6	9.4
5 or more	65.2	27.8	7.0

Source: Case-level records, N = 4,476 households.

Exhibit B-4.1

**Mean Proportion of Number and Value of Purchases Made in Each Store:
In Descending Order by Number of Stores Used in a Month**

Number of Stores Used Per Month		Mean Proportion of Number of Purchases in Each Store						
1	100%							
2	57.0	43.0						
3	40.1	32.1	27.8					
4	29.9	24.3	23.5	22.4				
5	26.1	21.1	20.2	18.6	13.9			
6	20.4	18.7	18.7	15.4	14.3	12.6		
7 or more	37.5	12.0	12.0	10.2	9.7	9.4	9.4	

		Mean Proportion of Money Spent in Each Store						
1	100%							
2	54.1	45.9						
3	45.2	29.1	25.8					
4	29.2	28.2	24.7	18.0				
5	28.4	23.2	20.0	17.1	11.3			
6	19.6	17.8	17.2	15.7	15.6	14.0		
7 or more	30.7	14.6	12.2	11.5	10.8	10.8	9.5	

Source: Transaction records (10% random sample), N=24,206 purchases.

Exhibit B-4.2

Proportion of Purchases Occurring by Day/Week

	Store Type			
	Supermarket	Grocery	Convenience	Other
Day 1	12.2%	10.3%	8.2%	8.3%
2	10.7	8.3	6.9	7.6
3	8.0	7.2	7.4	6.1
4	7.5	7.0	6.1	7.3
5	6.4	6.4	6.5	7.1
6	6.1	5.7	6.2	5.7
Week 1	54.8%	50.3%	47.0%	47.2%
2	24.9	29.4	29.3	28.7
3	12.8	13.4	15.0	14.1
End of Month	7.5	7.0	8.7	10.0

Source: Transaction records (10% random sample), N=24,206 purchases.

Exhibit B-4.3

Number of Different Stores Visited in
All Possible Store Type Combinations

Percent Using Combination	STORE TYPE			
	Supermarket	Grocery	Convenience	Other
29.0%	1.5			
22.0	1.6	1.6		
13.6	1.8	1.8	1.3	
9.7	2.0		1.2	
8.2		1.4		
5.2	1.7	2.4	1.4	1.3
4.8	1.6	2.1		1.2
1.7	1.8			1.1
1.6	2.0		1.3	1.1
1.4		2.0	1.2	
1.2		2.3		1.3
0.7		2.8	1.3	1.3
0.6			1.1	
0.5				1.0
0.1			1.1	1.2
100.0%				

Source: Case-month records, N=31,216.

Exhibit B-4.4

Characteristics of Households Using the
Six Most Popular Store Type Combinations

Characteristic	Combination					
	Supermarket Only (33.4%)	Supermarket and Grocery Store (24.2%)	Supermarket and Grocery Store and Convenience Store or "Other" (18.7%)	Supermarket and Convenience Store or "Other" (10.9%)	Grocery Store Only (7.6%)	All 4 Types (5.2%)
Years of Education 0-8 (N=871) 9-20 (N=2,190)	41.1* 30.2*	25.0 24.0	11.9* 21.5*	8.0* 12.0*	10.2* 6.4*	3.7* 5.8*
Sex Female (N=2,630) Male (N=448)	32.7 37.5	24.9* 20.5*	19.5* 13.8*	11.1 9.6	6.9* 11.8*	4.9 6.7
Language Spoken English (N=2,183) Other (N=895)	34.1 31.7	21.1* 32.0*	18.8 18.3	12.0* 8.3*	8.3* 5.8*	5.7* 3.9*
Employment Status Employed (N=404) Unemployed (N=2664)	24.5* 34.6*	29.0* 23.5*	22.8* 18.1*	13.6 10.5	5.7 7.9	4.5 5.3
Who Shops Self Only (N=2,365) Self & Others	34.2 ^a 30.1	23.5 20.1	18.4 ^a 15.1	10.3 ^b 7.1	8.4 ^c 5.1	5.2 3.1

Exhibit B-4.5

Number and Value of Purchases: Store Type Combination Patterns
By Benefit Amount

STORE TYPE															
Supermarket				Grocery				Convenience				Other			
1.7	3.3	4.3	5.7												
\$12.18	23.28	30.08	34.57												
1.2	1.6	1.9	2.1												
1.7	2.8	3.3	4.3	2.3	3.6	4.5	7.2								
\$10.91	19.42	31.02	36.33	\$4.33	6.36	6.76	6.53								
1.2	1.5	1.7	1.8	1.3	1.5	1.6	1.8								
1.8	3.2	3.8	5.2	3.3	4.4	4.8	6.4	1.9	3.1	3.9	4.7				
\$8.18	14.31	24.13	28.02	\$3.76	5.01	5.61	6.36	\$2.70	3.59	3.72	4.55				
1.2	1.5	1.7	2.0	1.6	1.9	1.8	1.9	1.1	1.3	1.3	1.2				
2.2	3.8	5.0	5.7					1.9	3.0	3.7	4.8				
\$9.07	18.06	23.05	26.28					\$3.55	4.08	4.52	5.48				
1.3	1.7	2.1	2.3					1.1	1.2	1.2	1.3				
				2.5	7.0	8.0	10.3								
				\$6.68	10.31	15.39	21.44								
				1.2	1.7	1.6	1.8								
2.4	3.5	3.7	6.1	5.0	5.5	6.3	6.8	2.1	4.7	3.9	4.9	1.6	3.3	3.8	4.8
\$6.37	10.45	20.52	20.44	\$2.68	4.04	4.93	6.05	\$2.34	2.78	3.57	3.85	\$2.01	3.07	3.72	4.31
1.3	1.5	1.6	1.9	2.6	2.3	2.5	2.4	1.2	1.5	1.3	1.4	1.3	1.3	1.3	1.3

Source: Case-month records, N=31,216.

Note: Each set of boxes corresponds to the four issuance categories: \$50 or less, \$51 to \$100, \$101 to \$160, and \$161 or more, respectively.

Exhibit B-4.6

Percent of Total Spending In Each Store Type By
Patterns of Store-Type Usage and Benefit Amount

STORE TYPE															
Supermarket				Grocery				Convenience				Other			
100	100	100	100												
63.8	70.1	76.7	77.3	36.3	30.0	23.3	22.7								
43.3	57.8	69.0	70.0	38.3	27.9	20.0	19.8	18.5	14.3	11.0	10.2				
73.1	84.3	87.2	87.1					26.9	15.8	12.8	12.9				
				100	100	100	100								
41.5	44.3	56.4	60.3	33.6	27.1	23.1	20.1	14.3	16.2	10.1	9.5	10.6	12.5	10.4	10.1

Source: Case-month records, N=31,216.

Note: Each set of boxes corresponds to the four issuance categories: \$50 or less, \$51 to \$100, \$101 to \$160, and \$161 or more, respectively.

Exhibit B-4.7

Mean Allotment of Households Broken Down by
Store Type Combination and Age/Disability Status

Combination	Characteristic				
	Disabled		Age of Head of Household		
	Yes (N=669)	No (N=2409)	Under 30 (N=991)	30-49 (N=1249)	50 or above (N=830)
Supermarket only	\$48.30	\$102.87	\$123.19	\$117.51	\$41.79
Supermarket and Grocery	\$104.09	\$143.86	\$141.91	\$159.25	\$76.18
Supermarket and Grocery and Convenience or "Other"	\$145.10	\$153.95	\$149.93	\$164.69	\$116.03
Supermarket and Convenience or "Other"	\$112.67	\$144.34	\$146.26	\$145.17	\$75.48
Grocery Only	\$ 41.81	\$52.86	\$119.43	\$89.24	\$25.45
All Other Types Combined	\$ 98.20	\$154.49	\$150.20	\$148.59	\$124.67

Source: Case-month merged with recipient survey data, N=3,078.

Exhibit B-5.1

Number of Months Between First Issuance
and Getting EBT Card Encoded:
System Start-Up

Number of Months Before Card Encoded	Number of Households	Percent	Percent Excluding 0
0	3,357	90.9%	--
1	71	1.9	21.1%
2	15	0.4	4.5
3	6	0.2	1.8
4	9	0.2	2.7
5	2	0.1	0.6
6	26	0.7	7.7
never encoded	208	5.6	61.7
Total	3,964 ^a	100.0%	100.0%

^aIncludes households that entered the Food Stamp Program during system start-up (October 1984 - January 1985).

Exhibit B-5.2

Characteristics of Households That Waited
At Least One Month Before Getting
EBT Card Encoded:
System Start-Up

Characteristic	Percent of Households		
	Eventually Encoded (N=129)	Never Encoded (N=208)	Population Percent
Allotment Amount:			
\$50 or less	27.8%*	45.2%*	20.5%
\$51 to \$100	27.8%*	38.9%*	29.5
\$101 to \$160	20.6%*	9.1%*	24.3
\$161 or more	23.8%*	6.7%*	25.7
Ethnicity:			
White	52.7%	57.7%	49.7%
Black	17.8	13.9	17.1
Hispanic or other	29.5	28.4	33.2
Public Assistance:			
Yes	34.9%*	22.6%*	51.9%
No	65.1%*	77.4%*	48.1
Household Size:			
1	48.8%*	65.4%*	39.2%
2	21.7	16.8	20.8
3 to 4	23.3%*	14.4%*	28.6
5 or more	6.3	3.4	11.4

Statistical significance: *, $p < 0.05$ for comparison of groups within characteristic classifications.

Exhibit B-5.3

Frequency and Duration of Shopping Inactivity

Number of Inactivity Spells	Duration of Inactivity Spell (Months)						Total	Mean Duration
	1	2	3	4	5	6 or more		
1 (N=325)	80.0%	12.0	3.1	2.8	1.2	0.9	100.0%	1.4
2 (N=120)	79.2	10.0	8.3	1.7	0.0	0.8	100.0%	1.4
3 (N=78)	74.4	18.0	6.4	0.0	1.3	0.0	100.0%	1.4
4 (N=36)	86.1	8.3	5.6	0.0	0.0	0.0	100.0%	1.2
5 (N=10)	100.0	0.0	0.0	0.0	0.0	0.0	100.0%	1.0
Mean	79.8	12.0	4.8	1.9	0.9	0.7	100.0%	1.4

Source: Case-level records, N=5,041 households of which 422 had one or more spells of shopping inactivity (a total of 569 spells).

Exhibit B-5.4

Duration of Spells Out of Food Stamp Program: Activity Resumes

Spells ending when household returned to Food Stamp Program

Number of Temporary Spells	Number of Percent of Spells	Duration of Inactivity Spell (Months)							Total	Average
		1	2	3	4	5	7	8 or more		
1 (N=383)	88.0%	44.4%	19.1	12.3	7.6	5.5	5.0	6.1	100.0%	2.6
2 (N=46)	10.6	50.0	19.6	6.5	8.7	8.7	2.2	4.4	100.0%	2.3
3 (N=6)	1.4	83.3	0.0	16.7	0.0	0.0	0.0	0.0	100.0%	1.3
(N=435)	Mean	45.5	18.9	11.7	7.6	5.8	4.6	6.0	100.0%	2.5

Source: Case-level records, N=5,041 households of which 1,813 experienced one or more spells out of the Food Stamp Program (total number of spells =1,929).

Exhibit B-5.5

**Duration of Spells Out of Food Stamp Program:
Spells Ending With Demonstration**

Duration (in months)	Number of Households Leaving Program Permanently	Percent of Spells
1	187	12.5%
2	170	11.4
3	176	11.8
4	157	10.5
5	148	9.9
6	129	8.6
7	123	8.2
8	105	7.0
9	83	5.6
10	71	4.8
11	68	4.6
12	56	3.8
13	21	1.4
mean = 5.4 months	Total = 1,494 households	Total = 100.0%

Source: Case-level records, N=5,041 households of which 1,813 experienced one or more spells out of the Food Stamp Program (total number of spells =1,929).

Exhibit B-5.6

Characteristics of Recipients Who Leave
the Food Stamp Program

Characteristic	Percent of Households		
	No Money Left (N=1,453)	Money Encoded (N=476)	Population Percent
Allotment Amount:			
\$50 or less	18.9%	20.2%	20.5%
\$51-\$100	36.6*	45.8*	29.5
\$101-\$160	21.4*	17.7*	24.3
\$161 or more	23.1*	16.4*	25.7
Ethnicity:			
White	48.0%*	55.9%*	49.7%
Black	17.4*	14.4*	17.1
Hispanic or Other	34.6*	29.7*	33.2
Public Assistance:			
Yes	45.1%	45.8%	51.9%
No	54.9	54.2	48.1
Household Size:			
1	36.3%*	52.5%*	39.2%
2	19.6	18.2	20.8
3-4	32.5*	21.2*	28.6
5 or more	11.6*	8.1*	11.4

Source: Case-level records, N=5,041 households of which 1,813 experienced one or more spells out of the Food Stamp Program (total number of spells =1,929).

Statistical significance: *, $p < 0.05$ for comparison of groups within characteristic classifications.